

SIDEWALK FEASIBILITY FINAL STUDY

S.R. 442, From Interstate 95 to Air Park Road

City of Edgewater

July 2018



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INTRODUCTION

The purpose of this study is to evaluate the feasibility of constructing sidewalks on both sides of State Road 442 (West Indian River Boulevard), from I-95 to Air Park Road (approximately 2.0 miles), in the City of Edgewater. The study limits are shown in **Figure 1**. The primary purpose of this project would be to provide pedestrian and bicyclist connectivity between the recently completed East Central Regional Rail Trail overpass crossing at Cow Creek Road, future developments west of I-95, and existing developments on the eastern portion of the City of Edgewater and upcoming St. Johns River-to-Sea Loop Florida Bike Trail at Hibiscus Drive.

Currently, there is no sidewalk along State Road 442 from I-95 to just west of Air Park Road. There is an existing sidewalk along both sides of State Road 442 from west of Air Park Road to South Ridgewood Avenue (U.S. 1). West of I-95, there are no sidewalks or existing developments. However, the forthcoming Restoration DRI project, which is approved for 8,500 residential units and 3,300,000 square feet of commercial land use, will be responsible for the construction of sidewalks on both sides of State Road 442 west of I-95 up to and through the I-95 interchange. Today, pedestrians and bicyclists wishing to travel along the corridor to access the recently completed East Central Regional Rail Trail at Cow Creek Road have to walk/bike along the side of the road or use the outside paved shoulder of State Road 442. The project purpose and scope for this study are further explained in Section 2, and revolve around the following major goals:

- Option A - construction of six-foot wide sidewalks on both sides of State Road 442 from Interstate 95 to Air Park Road.
- Option B – construction of a six-foot wide sidewalk on the north side of State Road 442 and a 12-foot wide asphalt shared use path on the south side of State Road 442 from Interstate 95 to Air Park Road.
- Connecting the proposed sidewalks to the recently completed East Central Regional Rail Trail crossing at Cow Creek Road and to the upcoming St. Johns River-to-Sea Loop Florida Bike Trail on Hibiscus Drive.

In addition to providing safer access to the East Central Regional Rail Trail, the proposed sidewalks along State Road 442 would provide local residents with safer access to public transportation, commercial properties, and other community amenities within the area.

Figure 1
Project Location Map



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PROJECT PURPOSE AND SCOPE

State Road 442 (West Indian River Boulevard) is the main east-west arterial roadway within the City of Edgewater, connecting I-95 to downtown Edgewater. This section of State Road 442 is a high speed four-lane divided rural roadway with a posted speed limit of 55 miles per hour. Currently, sidewalks are not provided along State Road 442 between I-95 and just west of Air Park Road. The East Central Regional Rail Trail crosses State Road 442 in this section with an overpass located at Cow Creek Road. According to Volusia County's website, the trail will one day stretch 52 miles from Deltona to Edgewater, including a 10-mile leg to Titusville. The showcase trail is 12 feet wide and paved, making it accessible to walkers, joggers, in-line skaters, bicyclists, and people with disabilities. East of Air Park Road, there are sidewalks on both sides of State Road 442, which extend easterly into downtown Edgewater. One focus of this sidewalk feasibility study is the extension of these sidewalks from their current terminus at Air Park Road westerly to I-95 with new six-foot sidewalks on both sides of State Road 442 (Option A). It should also be noted the upcoming St. Johns River-to-Sea Loop Florida Bike Trail will be constructed on Hibiscus Drive (1.24 miles east of Air Park Road), which will run along the east coast of Florida from Wilson to Daytona Beach, interconnecting to other trails. The proposed sidewalks on both sides of State Road 442 from Interstate 95 to Air Park Road will serve as a connection between the East Central Regional Rail Trail and the upcoming St. Johns River-to-Sea Loop Florida Bike Trail to the east. Therefore, the City of Edgewater has recommended that the proposed sidewalk width on the south side of State Road 442 be 12 feet to function as a shared use path (Option B). The primary purpose of this project would be to provide pedestrian and bicyclist connectivity to this section of State Road 442 and to provide safer access to the East Central Regional Rail Trail and upcoming St. Johns River-to-Sea Loop Florida Bike Trail.

There are currently approximately 255 residences located within 1/2 mile of the study corridor, the majority of which are located in the Coral Trace and Magnolia Village residential subdivisions. In addition, the study corridor also includes school bus stops for transportation to Edgewater Public Elementary School, New Smyrna Beach Middle School, and New Smyrna Beach High School. While the study corridor is currently lightly developed, the area is expected to undergo continued growth in population and development since State Road 442 serves as the primary gateway to the City of Edgewater from I-95. For example, Restoration DRI, which is located northwest of the I-95 interchange on State Road 442 (see **Appendix A**), is approved for up to 8,500 residential units, 3,300,000 square feet of commercial development and includes provisions for public school facilities. Based on the Transportation Proportionate Share Agreement within Restoration DRI, FDOT will require the developer to construct or provide the means necessary to construct the sidewalk improvements up to and through the I-95 interchange as shown in the Exhibit B Conceptual Layout (see **Appendix A**). Other future plans include a proposed K-8 school site located just southeast of the intersection of State Road 442 and Air Park Road. The planned sidewalk improvements included in this study would provide pedestrian and bicyclist network connectivity between developments on the west and east sides of the City of Edgewater, and would also serve to provide safe pedestrian routes to future educational facilities.

One of the reasons for the proposed sidewalk improvements along State Road 442 is to enhance safety for pedestrians and bicyclists that wish to access the East Central Regional Rail Trail. Currently, if a pedestrian desired to walk along the study corridor to access the trail, they would either have to walk on the outside paved shoulder or walk on the embankment beyond the paved shoulders. Bicyclists can currently utilize the existing four-foot wide outside paved shoulder along State Road 442 to access the trail, however less experienced and younger bicyclists who wish to use the trail would feel safer riding on sidewalks which are separated from the high-speed traffic.

The planned sidewalk improvements included in this study would provide a direct pedestrian and bicyclist connection between the downtown Edgewater and East Central Regional Rail Trail. These improvements would be expected to result in increased usage of the trail by Edgewater residents. A field review was conducted for the purposes of data collection, corridor evaluation, development of concept plans, and cost estimates. Items will be investigated to identify conditions that may provide input to the determination of improvements, with focus predominantly on the items that impact the proposed sidewalk improvements. Color photographs were taken along the study corridor with emphasis on obtaining visual information which would be of value to the City of Edgewater (the City), Volusia County (the County), the Florida Department of Transportation (FDOT), and the R2CTPO during any subsequent project plans preparation activities. These include utility conflicts, right-of-way constraints, obstructions, unusual geometrics, deficient pavement markings. A concept plan and typical section are provided in **Appendix B** and show existing roadway information and dimensions, including traffic control devices, driveways, sidewalks, signs, pavement markings, drainage inlets, buildings, utility and signal poles, lighting, and other fixed objects along with right-of-way lines. The Americans with Disabilities Act (ADA) requirements were used as requirements for the concept plans.

An ecological feasibility analysis was performed to identify potential impacts to wetlands and threatened and endangered species which would result from the proposed sidewalk improvements included in this study. The permitting requirements and estimated mitigation costs required as a result of any potential wetland or species impacts resulting from the proposed improvements are also summarized. A desktop study was conducted that includes background research in the history of the project corridor, as well as a records search for previously recorded cultural resources and professional archaeological surveys within or near this segment of State Road 442.

Based on the data collection, site reviews, and project coordination meetings, concept plans (see **Appendix B**) were prepared showing the proposed sidewalk improvements, drainage system modifications, driveway improvements, traffic signal adjustments, crosswalks, tie-ins to existing sidewalks, and connections to the East Central Regional Rail Trail. A critical component in the development of the improvement concept is the determination of the FDOT context classification for the corridor, which was determined by the FDOT to be C2 (rural - sparsely settled lands and may include agricultural land, grassland, woodland and wetlands) on State Road 442 from Interstate 95 to Old Mission Road, and C3C (suburban commercial – mostly non-residential uses with large building footprints and large parking lots within large blocks and a disconnected or sparse roadway network) from Old Mission Road to Air Park Road. A context classification map, provided by FDOT, is attached in **Appendix C**.

FDOT's Five (5) Year Work Program and Volusia County's Long Range Capital Improvement Plan were reviewed for any scheduled improvements along the State Road 442 study corridor. A resurfacing project on State Road 442 from the Interstate 95 northbound ramps to U.S. 1 (State Road 5) is currently programmed for construction in fiscal year 2020/2021 (FPID: 441132-1). The purpose of the project is to rehabilitate the asphalt pavement to extend the longevity of the roadway through milling and resurfacing. In 2001, State Road 442 was widened to a four-lane divided roadway (FPID: 240812-1-52-01). The widening plans (2001) are attached in ***Appendix D***.

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EXISTING CONDITIONS

The following section provides a general description of the characteristics observed within the project study limits in regards to the physical conditions, environmental conditions, drainage and utilities, and it also includes an assessment of the apparent right-of-way.

General Description

State Road 442 is an east-west arterial that extends from Interstate 95 through Edgewater to U.S. 1. The study corridor is on State Road 442 from Interstate 95 to Air Park Road, a length of approximately 2.0 miles. Along the study corridor, State Road 442 is a four-lane divided rural arterial (no curb and gutter) with paved shoulders on both sides of the road and a grass median that ranges from 22 to 45 feet). From an FDOT access management perspective, the roadway is currently an Access Class 3 facility. Currently, there are no sidewalks along the study corridor, with the exception of a small segment (200 feet or less) along the north and south sides of State Road 442 just west of Air Park Road. There is sidewalk on both sides of State Road 442 from east of Air Park Road to U.S. 1. The study area is predominantly undeveloped, with some commercial and residential developments. There are a few residential houses just west of Air Park Road on the north and south side of State Road 442. The commercial/residential/recreational developments along the study corridor are as follows:

- Marathon gas station
- East Central Regional Rail Trail overpass
- Florida Shores Truck Center
- Coral Trace subdivision

Along the study corridor there are two signalized intersections at Old Mission Road and Air Park Road. There are no pedestrian features at the State Road 442/Old Mission Road intersection. At the State Road 442/Air Park Road intersection, there are pedestrian features (crosswalks and pedestrian pushbuttons and signals) across all approaches of the intersection. All other side street intersections are controlled by STOP signs. The posted speed limit varies throughout the study corridor as follows:

- 45 mph from Interstate 95 to 600 feet west of Coral Trace Boulevard (station 28+00)
- 55 mph from 600 feet west of Coral Trace Boulevard to 500 feet west of Air Park Road (station 28+00 – 108+00)
- 45 mph from 500 feet west of Air Park Road to Air Park Road (station 108+00)

A field review was conducted on March 13, 2018. The project team assessed existing land uses, roadway typical sections, utilities, lighting, existing sidewalk and drainage items. State Road 442 was measured to be 84 feet wide to 107 feet wide. There are no railroad crossings within the study corridor. There is no roadway lighting within the study corridor, with the exception of existing lighting at the I-95 interchange at the western terminus of the study area. The East Central Regional Rail Trail overpass is located 1,100 feet east of Interstate 95 (station 24+00) as seen in the picture on the following page. Proposed sidewalk will extend along State Road 442 and tie-into this trail.



In addition, it should be noted that decorative trees have been planted on the south side of State Road 442, from 430 feet west of Old Mission Road to 750 feet east of Old Mission Road, as shown in the picture below. The trees will have to be removed and replanted with new trees in order to construct the proposed sidewalk.



Driveways

There are several driveways along the study corridor, including five (5) unpaved driveways and five (5) paved driveways. The unpaved driveways do not meet ADA requirements. See photos below. The concept plan exhibits identify the driveways recommended to receive ADA-compliant asphalt and concrete improvements. There are two (2) unpaved signed dirt roads (the north leg of Cow Creek Road and St. Croix Way). It should be noted that the side streets turn-outs of Waterplant Road (Spy Glass Court), Cow Creek Road (south leg), Coral Trace Boulevard, Old Mission Road, and Hideaway Lane, are all recommended to be resurfaced as part of this study. **Table 1** below shows driveways (not including side streets), owner addresses and improvements. The concept plan in **Appendix B** identifies the driveways that are recommended to receive ADA-compliant asphalt or concrete apron improvements.

Table 1
Driveway Information
State Road 442 from Interstate 95 to Air Park Road

Driveway Type	Station	Parcel ID	Property Address	Proposed Improvement
Dirt	18+50 (Lt.)	05-18-34-00-00-0050	3333 W Indian River Blvd	Asphalt Concrete
Paved	18+60 (Rt.)	08-18-34-00-00-0022	3338 W Indian River Blvd	Milling and Resurfacing
Paved	19+20 (Rt.)	08-18-34-00-00-0030	3336 W Indian River Blvd	Milling and Resurfacing
Paved	30+40 (Rt.)	05-18-34-00-00-0062	3220 W Indian River Blvd	Milling and Resurfacing
Paved	34+40 (Rt.)	38-18-34-03-00-0010	3198 W Indian River Blvd	Milling and Resurfacing
Dirt	41+10 (Rt.)	38-18-34-03-00-0020	3176 W Indian River Blvd	Asphalt Concrete
Dirt	46+50 (Lt.)	38-18-34-02-00-0010 (Lybrand Lane)	3149 W Indian River Blvd	Asphalt Concrete
Dirt	48+30 (Rt.)	38-18-34-03-00-0051	Not Available	Asphalt Concrete
Dirt	70+50 (Rt.)	38-18-34-01-00-0380	W Indian River Blvd	Asphalt Concrete
Paved	110+20 (Rt.)	38-18-34-01-00-2640	1862 Air Park Rd	Flared Concrete



Right-of-Way

State Road 442 is maintained by the FDOT within the City of Edgewater. Apparent right-of-way lines were obtained from Volusia County's Geographic Information Services (GIS) website and used to assess the right-of-way width along the study corridor. In addition, review of record engineering documents of State Road 442 was conducted for verification purposes. Right-of-way width varies and is a minimum of 200 feet. The apparent Right-of-way is also shown on the concept plans exhibits and in the typical section (see **Appendix B**).

Utilities

A utility assessment was made along the study corridor during the field visit. There is no street lighting along the study corridor, with the exception of existing lighting at the I-95 interchange at the western terminus of the study area. Overhead power lines are located on the south side of State Road 442 (see photo below). Overhead power lines are also located on the north side of State Road 442, just west of Air Park Road, from station 108+00 to station 112+60. A total of fifty-seven (57) overhead utility poles and four (4) luminaires were noted during the field visit.

The clear zone distance from the edge of pavement to the utility poles was generally 42 feet. Three (3) fire hydrants, five (5) water valves and seven (7) utility boxes were observed during the field visit. Underground fiber optic cable runs along the south side of the roadway from just west of Cow Creek Road (station 21+85) to station 100+90. A small segment of underground telephone is located on the north side of State Road 442, just west of Air Park Road, from station 109+00 to station 112+00. Water mains run along the south side of State Road 442 from Cow Creek Road to Air Park Road. Water main pipe and force main pipe also run from Coral Trace Boulevard to Old Mission Road on the north side of State Road 442.



Drainage and Permitting

This section of State Road 442 was previously permitted under SJRWMD Permit No. 4-127-64218-1 as part of the 2001 widening project which expanded the road from two lanes to four lanes. Stormwater management between I-95 and Old Mission Road is provided by a wet pond (WRA 'B') located south of the roadway at station 49+00. Stormwater management between Old Mission Road and Air Park Road is provided by two elongated median retention areas which extend from station 57+40 to 81+60 (WRA 'C') and station 82+40 to 109+00 (WRA 'D'). This section of State Road 442 is within the Turnbull Hammock drainage basin, which is a 13.2 mile long system that drains from north to south and ultimately discharges into the Indian River.

The typical section of State Road 442 between Cow Creek Road and Air Park Road is inverted, such that runoff from the travel lanes and inside shoulders are sloped inwards towards the median. Runoff that flows into the median between I-95 and Old Mission Road is collected by ditch bottom inlets, and is then conveyed via storm sewers to wet pond WRA 'B'. Runoff that flows into the elongated median retention areas between Old Mission Road and Air Park Road (WRA 'C' & 'D') is stored within the median and is controlled by outfall weir discharge structures. The portions of the State Road 442 right-of-way that are not sloped towards the center medians, including the outside paved shoulders and embankment grading, bypass the stormwater management systems and convey runoff into the Turnbull Hammock drainage basin via roadside ditch conveyance or direct overland runoff into adjacent wetlands. The original widening project included compensating water quality storage volume within WRA 'B', 'C', and 'D' to account for the areas which bypass the stormwater management facilities.

The northern portion of Turnbull Hammock is drained toward the south by seven cross-drains under this section of State Road 442. To maintain the hydro periods within the northern portion of the Turnbull Hammock wetland, each of these culverts include an outfall weir control structure on the north side of State Road 442. The existing cross-drains consist of the following:

- Station 17+00 – double-barrel 30-inch concrete pipe cross-drain
- Station 57+50 – 8-foot by 4-foot concrete box culvert cross-drain
- Station 61+80 – triple-barrel 24-inch polyvinyl pipe cross-drain
- Station 75+75 – triple-barrel 24-inch polyvinyl pipe cross-drain
- Station 83+80 – double-barrel 24-inch polyvinyl pipe cross-drain
- Station 92+70 – 30-inch corrugate metal pipe cross-drain
- Station 103+80 – double-barrel 30-inch corrugate metal pipe cross-drain

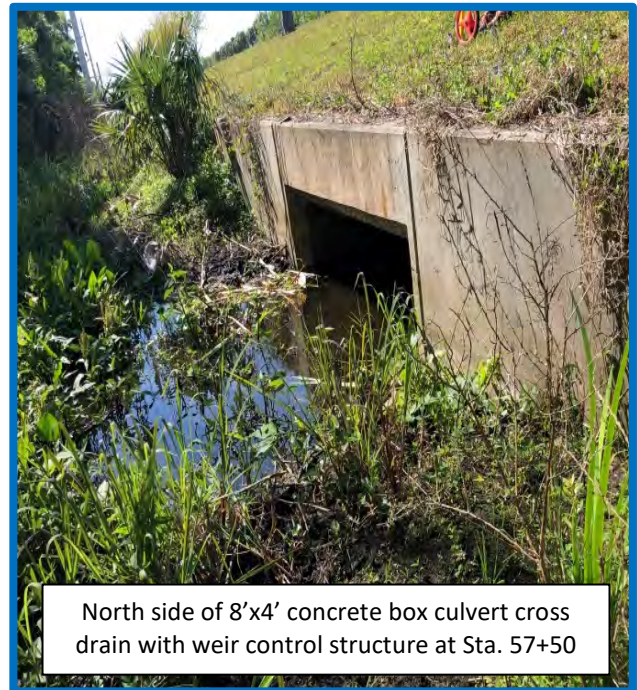
Field photos of some of the drainage structures are provided on the following page.

Soils

The proposed sidewalk traverses through Daytona sand, EauGallie fine sands, Immokalee sand, Myakka-Myakka fine sands, Paola fine sand, and Tuscawilla fine sand. A soils map is included in **Appendix E**. This map was prepared through the Web Soil Survey (WSS) operated by USDA Natural Resources Conservation Services (NRCS).



Cross drain on north side of SR 442 with control structure to maintain hydro periods



North side of 8'x4' concrete box culvert cross drain with weir control structure at Sta. 57+50

Environmental

An ecological feasibility study was for the proposed sidewalk project. The purpose of the investigation was to preliminarily assess the work corridor for the presence of jurisdictional wetlands in accordance with the current methodologies of the U.S. Army Corps of Engineers (ACOE) and the St. Johns River Water Management District (SJRWMD). In addition, the study corridor was investigated for the potential presence and/or use of the area by any species protected by the Florida Fish and Wildlife Conservation Commission (FWC) and/or the U.S. Fish and Wildlife Service (FWS). The study was initiated with a review of topographic maps, soil survey information, and color infrared aerial photographs of the study area, along with relevant technical publications and field guides. Upon completion of the in-house review, the project team inspected the study area on March 6, 2018.

Currently, the study corridor is comprised of the existing four-lane divided highway along with a mowed and maintained ROW and a maintained median. Immediately to the north and south of the corridor is a mix of residential and light commercial uses, along with wetlands associated with Turnbull Hammock. The vegetative assemblage of the forested wetlands along the edge of the ROW are typical for north central Florida and include a mix of cabbage palm (*Sabal palmetto*), sweetgum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), bald cypress (*Taxodium distichum*), blackgum (*Nyssa sylvatica* var. *biflora*), and wax myrtle (*Myrica cerifera*). In addition, small portions of the maintained ROW also exhibit wetland characteristics including hydrologic indicators and hydrophytic vegetation. The vegetation in these areas is a mix of herbaceous species including pickerelweed (*Pontederia cordata*), bacopa (*Bacopa* spp.), coinwort (*Centella* spp.), and panic grasses (*Panicum* spp.).

In 2001, a SJRWMD permit (#4-127-64218-1) was issued for this section of State Road 442 for expansion from two lanes to four lanes. In total, ±16.1 acres of wetlands were impacted along the northern and southern edges of the roadway for the roadway widening. The impacts were mitigated through Florida Department of Transportation (FDOT) funding for restoration activities within Turnbull Hammock. The proposed work was completed and the permit expired in 2006.

The study corridor was also reviewed for the presence of threatened and endangered species. The study was initiated with a literature search of the listed species known to occur in this portion of Volusia County, including FWC, FWS, and the Florida Natural Areas Inventory (FNAI) along with technical publications and field guides. Based on this information, and knowledge of the specific habitat requirements for the individual listed species, the probability of each species occurrence on the site was considered. Based on the investigation, no listed species, or evidence thereof, were found within the project area. There is potential for the gopher tortoise (*Gopherus polyphemus*) towards the western terminus of the project area where soils are better drained and elevations are relatively higher. Gopher tortoises are a state-threatened and federal candidate species; however, no burrows were noted during the investigation. Should any potentially occupied gopher tortoise burrows be noted within the project area, a permit from FWC would be required prior to commencement of any construction activities. It is recommended a formal survey be performed of the potential gopher tortoise areas prior to construction to ensure no burrows occur within the work area.

Wood storks are also listed as threatened by FWS and could potentially be utilizing the existing wetlands within the ROW for foraging. The project area does not fall within a designated core foraging area for the species. Based on the Wood Stork Key published by FWS, the project as proposed is not likely to adversely affect the species.

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SIDEWALK CONCEPT PLAN

As previously conveyed, the purpose of this study was to evaluate the feasibility of providing sidewalks on State Road 442 from Interstate 95 to Air Park Road. This section discusses the sidewalk concept plan and explains drainage and utilities improvements, field photos are included.

Sidewalk, Driveways, Signing and Pedestrian Facilities

Option A

- Construct six-foot sidewalk on both sides of State Road 442 from the western construction limits just east of Interstate 95 (station 13+80) to Air Park Road (station 113+00).
- The following improvements are recommended for the north side of State Road 442 for Option A:
 - Furnish and install a new multi-column guide sign located at station 14+70 to replace the existing guide sign which will be displaced by the proposed sidewalk.
 - Construct a new asphalt driveway at station 18+50 in place of the existing dirt driveway, as needed to provide an ADA compliant sidewalk crossing.
 - Mill and resurface the existing paved turn out for the roadway named “Waterplant” at station 20+80 as needed to provide an ADA compliant sidewalk crossing. A new STOP sign assembly, stop bar striping, double yellow centerline striping, and crosswalk striping will need to be installed.
 - Construct an eight-foot sidewalk at station 24+30 along Cow Creek Road which extends north and connects to the northern overpass landing of the East Central Regional Rail Trail.
 - Construct a new asphalt paved turn-out for Cow Creek Road at station 24+60 as needed to provide an ADA compliant sidewalk crossing. A new STOP sign assembly, stop bar striping, double yellow centerline striping, and cross walk striping will need to be installed.
 - Construct a new six-foot sidewalk at station 33+80 which extends north and connects to the existing sidewalk along the west side Coral Trace Blvd.
 - Mill and resurface the existing Coral Trace Blvd paved turn-out at station 34+40 as needed to provide an ADA compliant sidewalk crossing. A new STOP sign assembly, stop bar and turn lane striping, and crosswalk striping will need to be installed.
 - Construct a new asphalt driveway at station 46+50 (Lybrand Lane) in place of the existing dirt driveway, as needed to provide an ADA compliant sidewalk crossing.
 - Mill and resurface the existing Hideaway Lane turnout at station 68+80 as needed to provide an ADA compliant sidewalk crossing. A new STOP sign assembly, stop bar striping, and crosswalk striping will need to be installed.
 - Construct a new asphalt roadway turn-out for St. Croix Way at station 89+00 in place of the existing dirt roadway, as need to provide an ADA compliant sidewalk crossing. A new STOP sign assembly, stop bar striping, and crosswalk striping will need to be installed.

- The following improvements are recommended for the south side of State Road 442 for Option A:
 - Mill and resurface the existing paved driveway at station 18+60 as needed to provide an ADA compliant sidewalk crossing.
 - Mill and resurface the two (2) existing paved driveways to the Marathon gas station between stations 18+80 and 20+60 as needed to provide an ADA compliant sidewalk crossing.
 - Construct an eight-foot sidewalk at station 24+30 along Cow Creek Road which connects to the existing eight-foot-sidewalk which extends south to the southern overpass landing of the East Central Regional Rail Trail. The existing eight-foot sidewalk and detectable warning connection to Cow Creek Road should be removed.
 - Mill and resurface the existing Cow Creek Road paved turn-out at station 24+60 as needed to provide an ADA compliant sidewalk crossing. A new STOP sign assembly, stop bar striping, and cross walk striping will need to be installed.
 - Mill and resurface the existing paved driveway at station 30+40 as needed to provide an ADA compliant sidewalk crossing.
 - Mill and resurface the existing paved driveway at station 34+40 as needed to provide an ADA compliant sidewalk crossing.
 - Construct a new asphalt driveway at station 41+10 in place of the existing dirt driveway, as needed to provide an ADA compliant sidewalk crossing.
 - Construct a new asphalt driveway at station 48+30 in place of the existing dirt driveway, as needed to provide an ADA compliant sidewalk crossing. Note that this driveway currently provides access to an FDOT retention pond located to the south of the study corridor.
 - Remove and replace in-kind the 28 existing decorative trees between stations 52+00 and 56+20 and the forty-eight existing decorative trees between stations 58+40 and 64+00 to accommodate the proposed sidewalk improvements.
 - Construct a new asphalt driveway at station 70+50 in place of the existing dirt driveway, as needed to provide an ADA compliant sidewalk crossing.
 - Construct a new ADA compliant concrete driveway apron at station 110+20 in place of the existing asphalt driveway.

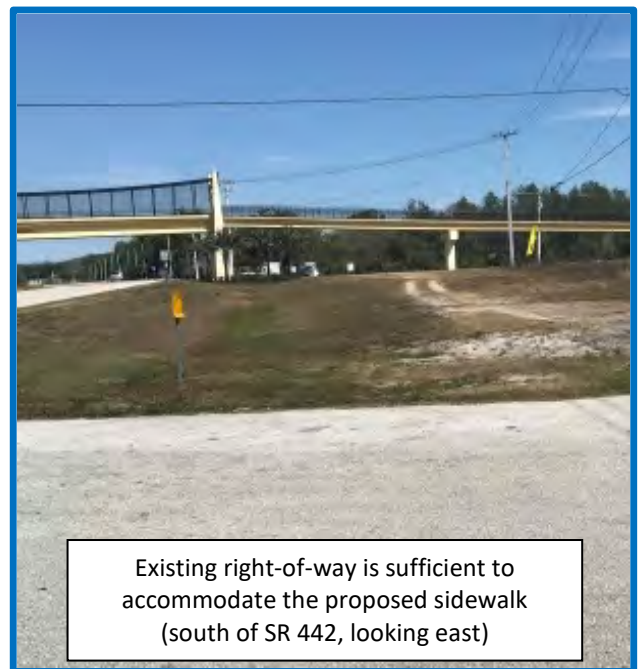
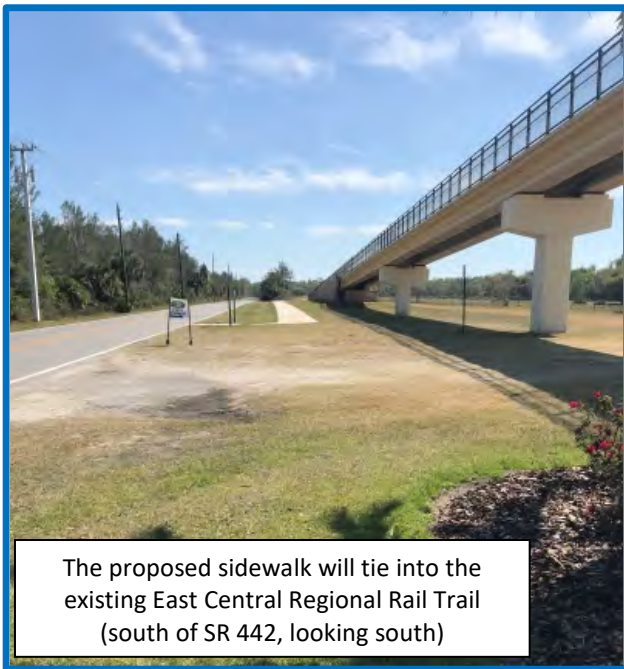
Option B

- Construct six-foot sidewalk on the north side of State Road 442 and a 12-foot asphalt shared use path on the south side of State Road 442 from the western construction limits just east of Interstate 95 (station 13+80) to Air Park Road (station 113+00).
- The specific improvements for Option B on the north side of State Road 442 will be the same as the previously summarized improvements for Option A (both propose six-foot wide sidewalks on the north side of the roadway).
- Construct a 12-foot asphalt shared use path on the south side of State Road 442 at station 24+30 along Cow Creek Road which connects to the existing eight-foot-sidewalk that extends south to the southern overpass landing of the East Central Regional Rail Trail. The existing eight-foot sidewalk and detectable warning connection to Cow Creek Road should be removed.

- The specific improvements for Option B on the south side of State Road 442 will be similar to those summarized previously for Option A, with the exception of the proposed 12-foot asphalt shared use path (rather than a six-foot sidewalk) on the south side of the road:
 - Shared use path signage and crosswalk striping should be installed as needed, as shown in the Option B Concept Plan in **Appendix B**. This includes 18" x 18" STOP signs for the shared use path at the Cow Creek and Coral Trace Boulevard intersections.

Both Options A and B at the Old Mission Road Intersection

- The improvements at Old Mission Road for both Options A and B are similar as follows:
 - Mill and resurface the existing intersection pavement within the areas indicated in the Concept Plan in **Appendix B** as needed to provide ADA compliant crosswalks.
 - Construct flush curb ramps with detectable warnings at all four corners of the intersection.
 - Install special emphasis crosswalks on all three (3) legs of the intersection.
 - Install pedestrian push button detectors and pedestrian signal heads at all four corners of the intersection.
 - Reconstruct the State Road 442 median nose on the east and west sides of the intersection as needed to accommodate the proposed crosswalks. New KEEP RIGHT sign assemblies will need to be installed on the new median noses.
 - Install new striping as needed to accommodate the new intersection configuration, including new stop bars, edge of lane lines, turn lane lines, etc.
 - Existing utility valves will need to be adjusted to finished grade.
 - On the north side of State Road 442, just west of Old Mission Road at station 56+00, remove the existing shoulder gutter flume and construct a new shoulder gutter along the existing edge of pavement which will drain into a new type 'V' gutter inlet.
 - On both sides of State Road 442 just east of Old Mission Road, the box culverts should be extended and new headwall constructed to accommodate the construction of sidewalk/shared use path. For the box culvert on the north side of the road, an additional outfall weir control structure is recommended for installation.



Drainage and Permitting

As stated previously, this section of State Road 442 was previously permitted under SJRWMD Permit No. 4-127-64218-1 as part of the 2001 widening project which expanded the road from two lanes to four lanes. Because the proposed improvements will occur within a previously permitted area, a SJRWMD permit modification will be required in accordance with 62-330.020(2) (j) F.A.C.

The proposed sidewalk improvements will occur predominantly within the portion of the State Road 442 right-of-way which currently bypasses the existing stormwater management system. However, the original permitted system was designed to provide compensating water quality storage for these areas, and the proposed sidewalk improvements are expected to increase the overall impervious area by less than 10%. For these reasons, modifications to the existing stormwater management facilities or the need for additional stormwater management facilities to treat runoff from the proposed sidewalk improvements are not anticipated to be required for the SJRWMD permit modification. Therefore, the proposed drainage improvements for this project shall be designed to maintain the existing drainage patterns.

Option A

The following drainage improvements are proposed for the north side of State Road 442 for Option A:

- Extend the double-barrel 30-inch cross drain at station 17+40 and construct a new straight concrete headwall to accommodate the proposed sidewalk alignment.
- Replace the existing 18-inch side drain at station 18+50.
- Replace the existing 30-inch side drain under the “Waterplant” at station 20+80.
- Replace the existing ditch bottom inlet at station 22+70 with a manhole, and then connect it to a new ditch bottom inlet on the north side of the proposed sidewalk such that existing drainage patterns are maintained.
- Adjust the existing ditch bottom inlet at station 27+75 to match finished grade.
- Replace the existing 30-inch side drain under Coral Trace Blvd at station 33+80.
- Replace the existing 30-inch side drain at station 52+00.
- Construct a new type ‘V’ gutter inlet at station 56+00 at the end of the proposed shoulder gutter extension, and construct a new storm drain to discharge runoff to the existing ditch north of the proposed sidewalk alignment, such that existing drainage patterns are maintained.
- Extend the existing 4-foot x 8-foot concrete box culvert at station 57+60 to accommodate the proposed sidewalk alignment. Construct a new concrete headwall, and reconstruct the previously permitted outfall weir control structure such that existing drainage patterns are maintained.

The following drainage improvements are proposed for the south side of State Road 442 for Option A:

- Construct a new double-barrel 30-inch cross drain under the proposed sidewalk at station 17+40.
- Construct a new 18-inch side drain at station 35+20 to accommodate the proposed sidewalk alignment.

- Replace the existing 24-inch x 38-inch side drain at station 46+40.
- Extend the double-barrel 30-inch cross drain at station 103+90 and construct a new concrete headwall to accommodate the proposed sidewalk alignment.

Option B

- The drainage improvements for Option B on the north side of State Road 442 will be the same of Option A as they both propose six-foot wide sidewalks on the north side of the roadway.
- The drainage improvements for Option B on the south side of State Road 442 will be similar to Option A, with some exceptions due to Option B proposing a 12-foot asphalt shared use path (rather than a six-foot sidewalk) on the south side of the road:
 - Replace the existing 18-inch side drain at station 34+40.
 - Extend the double-barrel 30-inch cross drain at station 103+90 and construct a new concrete headwall to accommodate the proposed shared use path alignment.

Utilities

The proposed sidewalk improvements are expected to be a fill-only project, with very limited excavation expected to occur below existing grade. Therefore, conflicts requiring the relocation of existing underground utilities are not expected for this project. Overhead utility poles are not expected to be impacted as a result of the proposed improvements, as there is sufficient right-of-way to adjust the sidewalk alignment around any potential conflict. Utility adjustments for this project are anticipated to only include the adjustment of existing utility appurtenances to match finished grade. Based on limited field observations, at least three (3) water valves and seven (7) fiber optic pull boxes will need to be adjusted to finished grade as a result of the proposed improvements. The concept plans included in **Appendix B**, depict the utility adjustments needed to accommodate the proposed sidewalk improvements along State Road 442.

Environmental

The proposed sidewalk construction activities fall within the maintained right-of-way of State Road 442. Much of this area was jurisdictional wetlands when the original four-lane expansion activities occurred, however these areas have since been filled and the majority of the area no longer meets the state or federal definition of a jurisdictional wetland. However, some areas within the maintained right-of-way still exhibit hydric characteristics and could potentially be claimed as jurisdictional by either SJRWMD or ACOE. As these areas were already permitted for impact and mitigation has been provided, it is not anticipated that either agency will request additional mitigation in the event any of these areas are affected by the sidewalk construction. Regardless, these areas will need to be delineated and depicted on the permit construction and engineering plans prior to permit issuance from both agencies.

In the event the project is designed so that the sidewalk construction necessitates the clearing of any areas outside of the original impacts, then mitigation will need to be provided as all wetlands immediately adjacent to the ROW will be jurisdictional to both agencies. Based on the concept plans included in **Appendix B**, it is currently estimated that the proposed

improvements will result in 0.233 acres of wetland impacts, which will require mitigation. The amount of mitigation will ultimately be dependent on the proposed wetland impact amount. Permit types, mitigation and timeframes will also depend on the amount of impact proposed. There are no mitigation banks located in this basin and mitigation would have to be completed through an off-site mitigation area. Under the assumption impacts would be less than a 0.5 acre, the estimated cost range could be \$15,000 to \$30,000. Should the impacts stay under 0.5 acre, an approximate time frame of no more than four months for permit acquisition is estimated. If impacts are greater than 0.5 acre, then an Individual Permit will be needed from ACOE, which will extend the permitting timeframe up to six to eight months.

Based on the project team's review, the proposed project does contain developmental constraints in the form of state and federal jurisdictional wetlands. However, based on previous permitting experience, it is not anticipated that any wetlands which fall within the maintained ROW of State Road 442 will require mitigation should they be impacted by the proposed sidewalks. Should any clearing of wetlands outside of the footprint of the original roadway expansion occur, mitigation will be required. A delineation of the wetlands that fall within the right-of-way will be necessary to accurately depict the extents of wetlands within the work area.

Finally, the project was investigated for the presence of any listed species. Developmental constraints are not anticipated from protected wildlife for the project, however the western terminus of the project should be surveyed for gopher tortoises prior to commencement of construction.

5

FINANCIAL FEASIBILITY

This section summarizes preliminary cost estimates for the design and construction of the proposed sidewalk improvements along State Road 442. This cost estimate is completed for the purposes of the feasibility study and to allow the River to Sea TPO and City of Edgewater to prioritize planned sidewalk improvements. The overall improvement costs were estimated based on FDOT historical unit prices from the FDOT Basis of Estimates. To adjust for potential future increases in the project's cost estimates, an annual inflation factor was applied based on FDOT guidelines. FDOT provides annual inflation factors for roadway construction costs. A listing of the FDOT approved inflation factors through 2028 is available in **Appendix F**.

The total cost of the improvements for Option A (six-foot wide sidewalks on both sides of State Road 442), including engineering and CEI, is estimated at approximately \$2,645,664 and is provided in **Table 2** on the following pages. Using FDOT inflation factors, the three-year breakdown for cost estimates is provided below:

- Year 1 (2019) cost estimate adjusted for inflation – \$2,717,097
- Year 2 (2020) cost estimate adjusted for inflation – \$2,791,176
- Year 3 (2021) cost estimate adjusted for inflation – \$2,859,963

The total cost of the improvements for Option B (six-foot wide sidewalk on the north side of State Road 442 and a 12-foot wide asphalt shared use path on the south side of State Road 442), including engineering and CEI, is estimated at approximately \$3,171,826 and is provided in **Table 3** on the following pages. Using FDOT inflation factors, the three-year breakdown for cost estimates is provided below:

- Year 1 (2019) cost estimate adjusted for inflation – \$3,257,465
- Year 2 (2020) cost estimate adjusted for inflation – \$3,346,276
- Year 3 (2021) cost estimate adjusted for inflation – \$3,428,744

Table 2
Cost Estimate – Option A
State Road 442 from Interstate 95 to Air Park Road

PAY ITEM NO.	PAY ITEM DESCRIPTION	UNIT	QUANTITY	2018 UNIT PRICE	AMOUNT
101-1	MOBILIZATION	LS	1	\$147,683.00	\$147,683.00
102-1	MAINTENANCE OF TRAFFIC	LS	1	\$164,092.00	\$164,092.00
104-10-3	SEDIMENT BARRIER	LF	19680	\$3.00	\$59,040.00
104-18	INLET PROTECTION SYSTEM	EA	26	\$135.00	\$3,510.00
110-1-1	CLEARING AND GRUBBING	AC	24,532	\$10,600.00	\$260,039.20
110-3	REMOVAL OF EXISTING STRUCTURES/BRIDGES	SF	50	\$55.00	\$2,750.00
110-4	REMOVAL OF EXISTING CONCRETE PAVEMENT	SY	32	\$30.00	\$960.00
110-7-1	MAILBOX, F&I SINGLE	EA	1	\$140.00	\$140.00
120-1	REGULAR EXCAVATION	CY	437	\$11.50	\$5,025.50
120-2-2	BORROW EXCAVATION, TRUCK MEASURE	CY	1657	\$35.00	\$57,995.00
120-6	EMBANKMENT	CY	2094	\$7.00	\$14,658.00
160-4	TYPE B STABILIZATION	SY	1405	\$4.20	\$5,901.00
285-706	OPTIONAL BASE GROUP 6	SY	1318	\$30.00	\$39,540.00
327-70-1	MILLING EXIST ASPHALT PAVT 3/4" AVG DEPTH	SY	5299	\$2.00	\$10,598.00
334-1-13	SUPER PAVE ASPHALTIC CONCRETE, TRAFFIC C	TN	179	\$170.00	\$30,430.00
337-7-25	ASPHALT CONCRETE FRICTION COURSE, INC BIT, FC-5, PG 76-22	TN	162	\$105.00	\$17,010.00
337-7-82	APHALT CONCRETE FRICTION COURSE, TRAFFIC C, FC-9.5, PG 76-22	TN	103	\$125.00	\$12,875.00
400-1-2	CONCRETE CLASS I, ENDWALLS	CY	20	\$1,335.00	\$26,700.00
400-2-1	CONCRETE CLASS II, CULVERTS	CY	25	\$930.00	\$23,250.00
415-1-1	REINFORCING STEEL-ROADWAY	LB	8400	\$0.82	\$6,888.00
425 1521	INLETS, DT BOT, TYPE C, <10'	EA	1	\$3,185.00	\$3,185.00
425-1711	INLETS, GUTTER, TYPE V, <10'	EA	1	\$3,920.00	\$3,920.00
425-2-41	MANHOLES, P-7, <10'	EA	1	\$3,880.00	\$3,880.00
425-4	INLETS, ADJUST	EA	1	\$1,250.00	\$1,250.00
425-6	VALVE BOX, ADJUST	EA	10	\$610.00	\$6,100.00
430-174-118	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 18"	LF	90	\$70.00	\$6,300.00
430-174-130	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 30"SD	LF	311	\$115.00	\$35,765.00
430-174-230	PIPE CULVERT, OPTIONAL MATERIAL, OTHER SHAPE-ELLIP/ARCH, 30"SD	LF	55	\$175.00	\$9,625.00
430 98 2125	MITERED END SECT, OPTIONAL RD, 18" CD	EA	2	\$1,300.00	\$2,600.00
430 98 2133	MITERED END SECT, OPTIONAL RD, 30" CD	EA	12	\$4,475.00	\$53,700.00
520-3	VALLEY GUTTER-CONCRETE	LF	32	\$35.00	\$1,120.00
522-1	CONCRETE SIDEWALK, 4" THICK	SY	13355	\$42.50	\$567,587.50
522-2	CONCRETE DRIVEWAY, 6" THICK	SY	28	\$61.50	\$1,722.00
527-2	DETECTABLE WARNINGS	SF	240	\$27.00	\$6,480.00
570-1-2	PERFORMANCE TURF, SOD	SY	84018	\$2.50	\$210,045.00
580-5-21	LANDSCAPE TREES	UN	76	\$1,000.00	\$76,000.00
630-2-11	COUNDUIT, F&I, OPEN TRENCH	LF	500	\$6.68	\$3,340.00
630-2-12	COUNDUIT, F&I, DIRECTIONAL BORE	LF	585	\$19.79	\$11,577.15
632-7-1	SIGNAL CABLE-NEW OR RECONSTRUCTED INTERSECTION, F&I	PI	1	\$4,730.00	\$4,730.00
635-2-11	PULL & SPLICE BOX, F&I	EA	14	\$650.00	\$9,100.00
0639 1112	ELECTRICAL POWER SRV,F&I,OH,M,PUR BY CON	AS	1	\$1,991.41	\$1,991.41
0639 2 1	ELECTRICAL SERVICE WIRE, F&I	LF	100	\$6.19	\$619.00
0639 3 11	ELEC SERV DISCON, F&I, POLE MNT	EA	1	\$805.90	\$805.90
646-1-12	ALUMINUM SIGNAL POLE, F&I PEDESTRIAN DETECTOR POST	EA	4	\$1,245.00	\$4,980.00
653-1-11	PEDESTRIAN SIGNAL, F&I LED COUNTDOWN, 1 WAY	AS	2	\$625.00	\$1,250.00
653-1-12	PEDESTRIAN SIGNAL, F&I LED COUNTDOWN, 2 WAY	AS	2	\$1,250.00	\$2,500.00
0660 4 11	VEHICLE DETECTION SYSTEM- VIDEO, CABINET	EA	1	\$5,509.30	\$5,509.30
0660 4 12	VEHICLE DETECTION SYSTEM- VIDEO, ABOVE G	EA	3	\$4,374.69	\$13,124.07
670-5400	TRAFFIC SIGNAL CONTROLLER, MODIFY	EA	1	\$1,820.00	\$1,820.00
700-1-11	SINGLE POST SIGN, F&I, GROUND MOUNT, UP TO 12SF	AS	12	\$345.00	\$4,140.00
700-1-60	SINGLE POST SIGN, REMOVE	AS	10	\$15.00	\$150.00
711-11-123	THERMOPLASTIC, STANDARD, WHITE, SOLID, 12"	LF	600	\$3.00	\$1,800.00
711-11-125	THERMOPLASTIC, STANDARD, WHITE, SOLID, 24"	LF	1235	\$5.00	\$6,175.00
711-11-170	THERMOPLASTIC, STANDARD WHITE, ARROW	EA	4	\$70.00	\$280.00
711-11-224	THERMOPLASTIC, STANDARD YELLOW, SOLID, 18"	LF	26	\$4.00	\$104.00
711-16-101	THERMOPLASTIC, STD-OTH, WHITE, SOLID, 6"	GM	0.038	\$4,195.00	\$159.41
711-16-201	THERMOPLASTIC, STD-OTH, YELLOW, SOLID, 6"	GM	0.042	\$4,140.00	\$173.88
711-17	THERMOPLASTIC, REMOVE EXISTING THERMOPLASTIC PAVEMENT MARKINGS	SF	0	\$3.50	\$0.00
0715 1 12	LIGHTING CONDUCTORS, F&I, INSUL, NO.8-6	LF	3798	\$1.22	\$4,632.95
0715 4 23	LIGHT POLE COMPLETE, F&I- STD P, SP, 40'	EA	8	\$9,298.32	\$74,386.56
0715500 1	POLE CABLE DIST SYS, CONVENTIONAL	EA	8	\$483.20	\$3,865.60
0715 7 11	LOAD CENTER, F&I, SECONDARY VOLTAGE	EA	1	\$10,465.98	\$10,465.98
-	WETLAND MITIGATION	AC	0.377	\$60,000.00	\$22,620.00
CONSTRUCTION COSTS SUBTOTAL					\$2,068,664.41

Table 2 - continued
Cost Estimate – Option A
State Road 442 from Interstate 95 to Air Park Road

PAY ITEM NO.	PAY ITEM DESCRIPTION	UNIT	QUANTITY	2018 UNIT PRICE	AMOUNT
-	SURVEYING	LS	1	\$75,000.00	\$ 75,000.00
-	CULTURAL RESOURCES	LS	1	\$10,000.00	\$ 10,000.00
-	GEOTECHNICAL	LS	1	\$ 5,000.00	\$ 5,000.00
-	ENVIRONMENTAL / (INCLUDES WETLAND DELINEATION & GT SURVEY)	LS	1	\$10,000.00	\$ 10,000.00
-	ENGINEERING	LS	1	\$245,000.00	\$ 245,000.00
-	STRUCTURAL	LS	1	\$40,000.00	\$ 40,000.00
-	CEI	LS	1	\$ 192,000.00	\$ 192,000.00
CEI / DESIGN / SURVEY SUBTOTAL					\$577,000.00
TOTAL PROJECT COST					\$2,645,664.41
FDOT INFLATION-ADJUSTED ESTIMATE			INFLATION FACTOR	PDC MULTIPLIER	ADJ COST
2019 ESTIMATED PROJECT COST			2.7%	1.027	\$2,717,097.35
2020 ESTIMATED PROJECT COST			2.8%	1.055	\$2,791,175.95
2021 ESTIMATED PROJECT COST			2.6%	1.081	\$2,859,963.23

* Ultimate costs for Environmental and Cultural Resources will be determined once results of initial surveys are obtained
 PE Costs include Surveying, Wetland Delineation, Environmental, Cultural Resources, Geotechnical, Structural, and Engineering

Table 3
Cost Estimate – Option B
State Road 442 from Interstate 95 to Air Park Road

PAY ITEM NO.	PAY ITEM DESCRIPTION	UNIT	QUANTITY	2018 UNIT PRICE	AMOUNT
101-1	MOBILIZATION	LS	1	\$186,810.00	\$186,810.00
102-1	MAINTENANCE OF TRAFFIC	LS	1	\$207,566.00	\$207,566.00
104-10-3	SEDIMENT BARRIER	LF	19680	\$3.00	\$59,040.00
104-18	INLET PROTECTION SYSTEM	EA	26	\$135.00	\$3,510.00
110-1-1	CLEARING AND GRUBBING	AC	25887	\$10,600.00	\$274,402.20
110-3	REMOVAL OF EXISTING STRUCTURES/BRIDGES	SF	50	\$55.00	\$2,750.00
110-4	REMOVAL OF EXISTING CONCRETE PAVEMENT	SY	88	\$30.00	\$2,640.00
110-7-1	MAILBOX, F&I SINGLE	EA	1	\$140.00	\$140.00
120-1	REGULAR EXCAVATION	CY	369	\$11.50	\$4,243.50
120-2-2	BORROW EXCAVATION, TRUCK MEASURE	CY	2355	\$35.00	\$82,425.00
120-6	EMBANKMENT	CY	2724	\$7.00	\$19,068.00
160-4	TYPE B STABILIZATION	SY	15239	\$4.20	\$64,003.80
285-701	OPTIONAL BASE GROUP 1	SY	12978	\$20.00	\$259,560.00
285-706	OPTIONAL BASE GROUP 6	SY	1318	\$30.00	\$39,540.00
327-70-1	MILLING EXIST ASPHALT PAVT 3/4" AVG DEPTH	SY	5299	\$2.00	\$10,598.00
334-1-13	SUPER PAVE ASPHALTIC CONCRETE, TRAFFIC C	TN	1785	\$170.00	\$303,450.00
337-7-25	ASPHALT CONCRETE FRICTION COURSE, INC BIT, FC-5, PG 76-22	TN	162	\$105.00	\$17,010.00
337-7-82	APHALT CONCRETE FRICTION COURSE, TRAFFIC C, FC-9.5, PG 76-22	TN	103	\$125.00	\$12,875.00
400-1-2	CONCRETE CLASS I, ENDWALLS	CY	20	\$1,335.00	\$26,700.00
400-2-1	CONCRETE CLASS II, CULVERTS	CY	50	\$930.00	\$46,500.00
415-1-1	REINFORCING STEEL-ROADWAY	LB	8400	\$0.82	\$6,888.00
425 1521	INLETS, DT BOT, TYPE C, <10'	EA	1	\$3,185.00	\$3,185.00
425-1711	INLETS, GUTTER, TYPE V, <10'	EA	1	\$3,920.00	\$3,920.00
425-2-41	MANHOLES, P-7, <10'	EA	1	\$3,880.00	\$3,880.00
425-4	INLETS, ADJUST	EA	1	\$1,250.00	\$1,250.00
425-6	VALVE BOX, ADJUST	EA	10	\$610.00	\$6,100.00
430-174-118	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 18"	LF	255	\$70.00	\$17,850.00
430-174-130	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 30"SD	LF	355	\$115.00	\$40,825.00
430-174-230	PIPE CULVERT, OPTIONAL MATERIAL, OTHER SHAPE-ELLIP/ARCH, 30"SD	LF	65	\$175.00	\$11,375.00
430 98 2125	MITERED END SECT, OPTIONAL RD, 18" CD	EA	8	\$1,300.00	\$10,400.00
430 98 2133	MITERED END SECT, OPTIONAL RD, 30" CD	EA	8	\$4,475.00	\$35,800.00
520-3	VALLEY GUTTER-CONCRETE	LF	32	\$35.00	\$1,120.00
522-1	CONCRETE SIDEWALK, 4" THICK	SY	6815	\$42.50	\$289,637.50
522-2	CONCRETE DRIVEWAY, 6" THICK	SY	184	\$61.50	\$11,316.00
527-2	DETECTABLE WARNINGS	SF	355	\$27.00	\$9,585.00
570-1-2	PERFORMANCE TURF, SOD	SY	95021	\$2.50	\$237,552.50
580-5-21	LANDSCAPE TREES	UN	76	\$1,000.00	\$76,000.00
630-2-11	CONDUIT, F&I, OPEN TRENCH	LF	500	\$6.68	\$3,340.00
630-2-12	CONDUIT, F&I, DIRECTIONAL BORE	LF	585	\$19.79	\$11,577.15
632-7-1	SIGNAL CABLE-NEW OR RECONSTRUCTED INTERSECTION, F&I	PI	1	\$4,730.00	\$4,730.00
635-2-11	PULL & SPLICE BOX, F&I	EA	14	\$650.00	\$9,100.00
0639 1112	ELECTRICAL POWER SRV,F&I,OH,M,PUR BY CON	AS	1	\$1,991.41	\$1,991.41
0639 2 1	ELECTRICAL SERVICE WIRE, F&I	LF	100	\$6.19	\$619.00
0639 3 11	ELEC SERV DISCON, F&I, POLE MNT	EA	1	\$805.90	\$805.90
635-2-11	PULL & SPLICE BOX, F&I	EA	6	\$650.00	\$3,900.00
646-1-12	ALUMINUM SIGNAL POLE, F&I PEDESTRIAN DETECTOR POST	EA	4	\$1,245.00	\$4,980.00
653-1-11	PEDESTRIAN SIGNAL, F&I LED COUNTDOWN, 1 WAY	AS	2	\$625.00	\$1,250.00
653-1-12	PEDESTRIAN SIGNAL, F&I LED COUNTDOWN, 2 WAY	AS	2	\$1,250.00	\$2,500.00
0660 4 11	VEHICLE DETECTION SYSTEM- VIDEO, CABINET	EA	1	\$5,509.30	\$5,509.30
0660 4 12	VEHICLE DETECTION SYSTEM- VIDEO, ABOVE G	EA	3	\$4,374.69	\$13,124.07
670-5400	TRAFFIC SIGNAL CONTROLLER, MODIFY	EA	1	\$1,820.00	\$1,820.00
700-1-11	SINGLE POST SIGN, F&I, GROUND MOUNT, UP TO 12SF	AS	16	\$345.00	\$5,520.00
700-1-60	SINGLE POST SIGN, REMOVE	AS	10	\$15.00	\$150.00
711-11-123	THERMOPLASTIC, STANDARD, WHITE, SOLID, 12"	LF	600	\$3.00	\$1,800.00
711-11-125	THERMOPLASTIC, STANDARD, WHITE, SOLID, 24"	LF	1417	\$5.00	\$7,085.00
711-11-170	THERMOPLASTIC, STANDARD WHITE, ARROW	EA	4	\$70.00	\$280.00
711-11-224	THERMOPLASTIC, STANDARD YELLOW, SOLID, 18"	LF	26	\$4.00	\$104.00
711-16-101	THERMOPLASTIC, STD-OTH, WHITE, SOLID, 6"	GM	0.038	\$4,195.00	\$159.41
711-16-201	THERMOPLASTIC, STD-OTH, YELLOW, SOLID, 6"	GM	0.042	\$4,140.00	\$173.88
0715 1 12	LIGHTING CONDUCTORS, F&I, INSUL, NO.8-6	LF	3798	\$1.22	\$4,632.95
0715 4 23	LIGHT POLE COMPLETE, F&I- STD P, SP, 40'	EA	8	\$9,298.32	\$74,386.56
0715500 1	POLE CABLE DIST SYS, CONVENTIONAL	EA	8	\$483.20	\$3,865.60
0715 7 11	LOAD CENTER, F&I, SECONDARY VOLTAGE	EA	1	\$10,465.98	\$10,465.98
-	WETLAND MITIGATION	AC	0.524	\$60,000.00	\$31,440.00
CONSTRUCTION COSTS SUBTOTAL					\$2,594,825.71

Table 3 - continued
Cost Estimate – Option B
State Road 442 from Interstate 95 to Air Park Road

PAY ITEM NO.	PAY ITEM DESCRIPTION	UNIT	QUANTITY	2018 UNIT PRICE	AMOUNT
-	SURVEYING	LS	1	\$75,000.00	\$ 75,000.00
-	CULTURAL RESOURCES	LS	1	\$10,000.00	\$ 10,000.00
-	GEOTECHNICAL	LS	1	\$ 5,000.00	\$ 5,000.00
-	ENVIRONMENTAL / (INCLUDES WETLAND DELINEATION & GT SURVEY)	LS	1	\$10,000.00	\$ 10,000.00
-	ENGINEERING	LS	1	\$ 245,000.00	\$ 245,000.00
-	STRUCTURAL	LS	1	\$40,000.00	\$ 40,000.00
-	CEI	LS	1	\$ 192,000.00	\$ 192,000.00
SOFT COSTS SUBTOTAL					\$577,000.00
TOTAL PROJECT COST					\$3,171,825.71
FDOT INFLATION-ADJUSTED ESTIMATE			INFLATION FACTOR	PDC MULTIPLIER	ADJ COST
2019 ESTIMATED PROJECT COST			2.7%	1.027	\$3,257,465.00
2020 ESTIMATED PROJECT COST			2.8%	1.055	\$3,346,276.12
2021 ESTIMATED PROJECT COST			2.6%	1.081	\$3,428,743.59

* Ultimate costs for Environmental and Cultural Resources will be determined once results of initial surveys are obtained

PE Costs include Surveying, Wetland Delineation, Environmental, Cultural Resources, Geotechnical, Structural, and Engineering

6

CONCLUSION

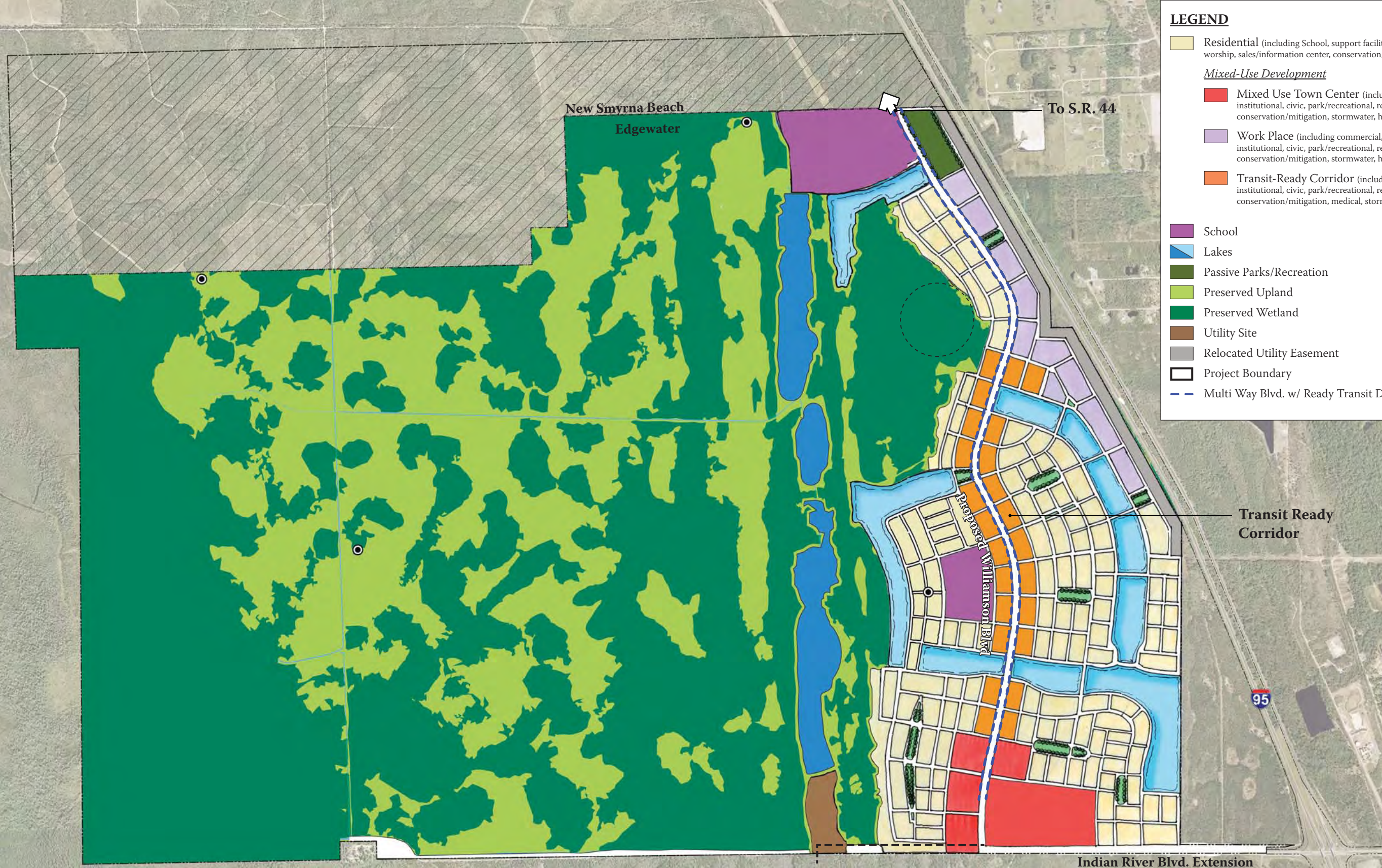
The purpose of this study was to evaluate the feasibility of constructing sidewalks on both sides of State Road 442 (West Indian River Boulevard), in the City of Edgewater, from I-95 to Air Park Road. In addition, key components of the study include drainage considerations of State Road 442, providing a crossing at the State Road 442/Old Mission Road intersection, connectivity to the East Central Regional Rail Trail overpass both south and north of State Road 442, connectivity to the existing sidewalks at Air Park Road, and appropriate termination points at the west end of the study corridor. The primary purpose of this project would be to provide pedestrian and bicyclist connectivity between the recently completed East Central Regional Rail Trail overpass crossing at Cow Creek Road, future developments west of I-95, and existing developments on the eastern portion of the City of Edgewater and upcoming St. Johns River-to-Sea Loop Florida Bike Trail at Hibiscus Drive. The following recommendations and conditions have been determined along the study corridor:

- Option A - It is recommended to construct six-foot wide sidewalks on both sides of State Road 442 from Interstate 95 to Air Park Road, entirely within the existing maintained right-of-way for State Road 442 (see the Concept plans in **Appendix B**).
- Option B – it is recommended to construct six-foot sidewalk on the north side of State Road 442 and a 12-foot wide asphalt shared use path on the south side of State Road 442 from Interstate 95 to Air Park Road, entirely within the existing maintained right-of-way for State Road 442 (see the Concept plans in **Appendix B**).
- Proposed sidewalk on State Road 442 from the concept plan for this study will tie into proposed sidewalk just east of Interstate 95 shown in the Restoration Development of Regional Impact (DRI) Exhibit B Conceptual Layout.
- The proposed sidewalk is recommended to tie into the East Central Regional Rail Trail north and south of State Road 442.
- New driveway turnouts constructed with asphalt pavements/milling and resurfacing is recommended for driveway turnouts in order to meet ADA standards.
- Some drainage facilities along the study corridor are recommended to be modified including replacement and adjustment of drainage facilities to finished grade.
- Crosswalks are recommended to be striped across rebuilt/constructed driveway turnouts.
- Crosswalks on all legs of the State Road 442/Old Mission Road are recommended, in addition to pedestrian signal heads and detectors.
- The engineering and construction costs associated with these improvements are estimated at approximately \$2,645,664 for Option A and \$3,171,826 for Option B.

APPENDIX

APPENDIX A

RESTORATION DEVELOPMENT OF REGIONAL IMPACT



LEGEND

Residential (including School, support facilities, civic institutional places of worship, sales/information center, conservation/mitigation stormwater)

Mixed-Use Development

Mixed Use Town Center (including commercial, office, institutional, civic, park/recreational, residential, places of worship, conservation/mitigation, stormwater, hospital, lodging)

Work Place (including commercial, light industrial, office, medical, institutional, civic, park/recreational, residential, places of worship, conservation/mitigation, stormwater, hospital, lodging)

Transit-Ready Corridor (including commercial, office, institutional, civic, park/recreational, residential, places of worship, conservation/mitigation, medical, stormwater)

School

Lakes

Passive Parks/Recreation

Preserved Upland

Preserved Wetland

Utility Site

Relocated Utility Easement

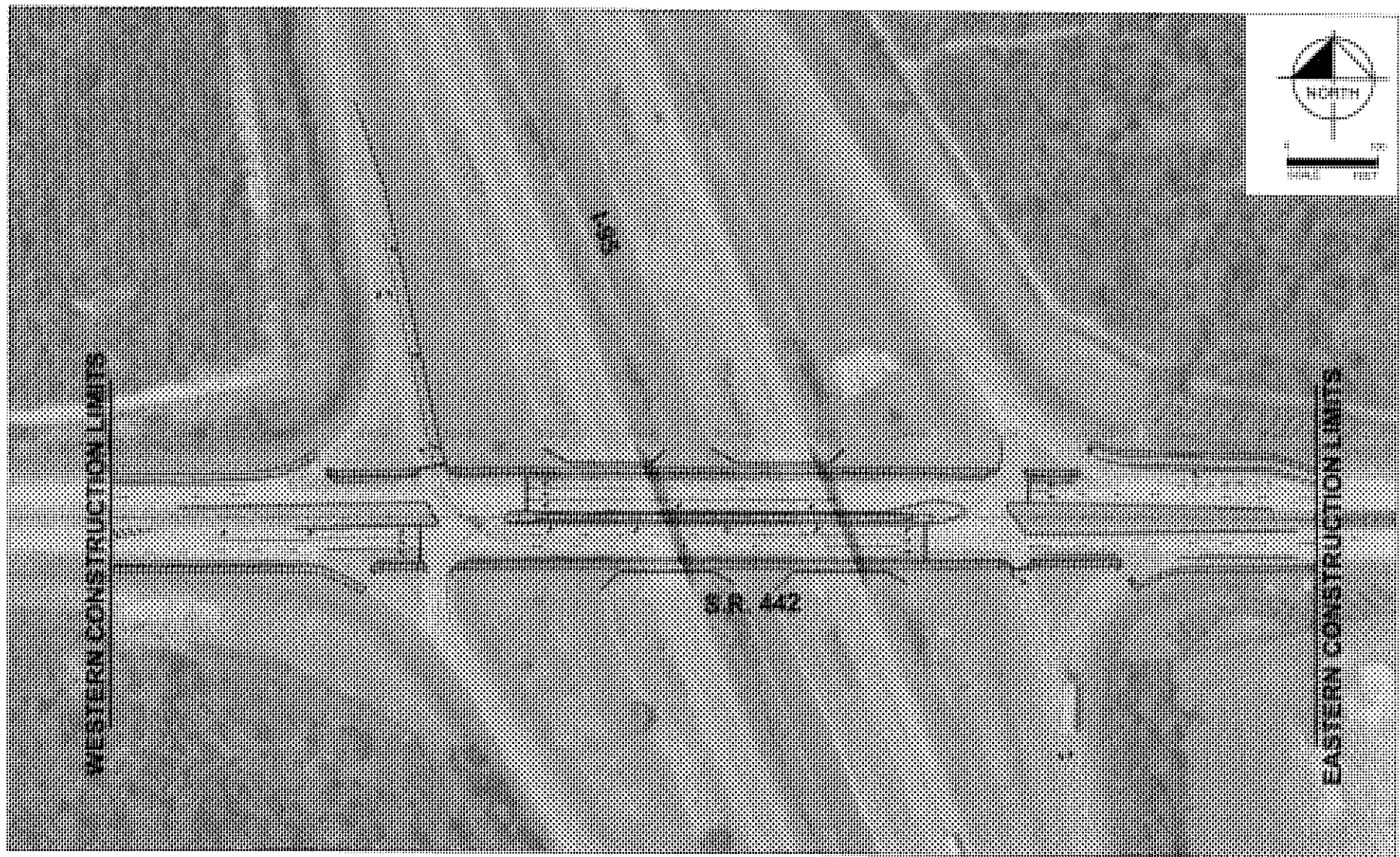
Project Boundary

Multi Way Blvd. w/ Ready Transit Design

DISCLAIMER
Map H is part of the DRI review and approval process and is conceptual only. The locations of the various land uses, street networks, and lakes depicted on Map H are therefore approximate and subject to change. The developer intends to develop detailed design plans that may refine and modify Map H prior to sales and construction without notice.



Drawings source: K:\PTD_20701\140724000-Restoration DRI\Development\Conc\Final Mitigation Concept\SR 442 Concept-BR.dwg Layout1 Jan 22 2009 11:35am by: newlandford



				SCALE	NTS	 Kimley-Horn and Associates, Inc. <small>© 2008 KIMLEY-HORN AND ASSOCIATES, INC. 851 DULANTON AVENUE, SUITE 302, PORT ORANGE, FL 32127 PHONE: 386-761-2258 FAX: 386-761-2498 WWW.KIMLEY-HORN.COM CA 00000895</small>	DATE	1/23/2009	Restoration DRI	DESIGN ENGINEER	EXHIBIT "B" S.R. 442 @ I-95 INTERCHANGE CONCEPTUAL LAYOUT	SHEET NUMBER 1
				DESIGNED BY	AMB					FLORIDA REGISTRATION NUMBER		
				DRAWN BY	RPS		PROJECT NO.					
				CHECKED BY	C.W.		149024000					
No.				REVISIONS	DATE	BY	EDGEWATER	FLORIDA	DATE:			

APPENDIX B

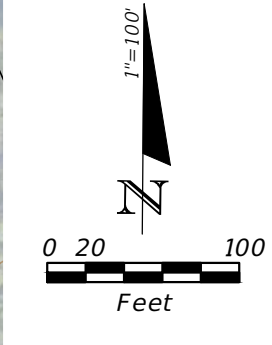
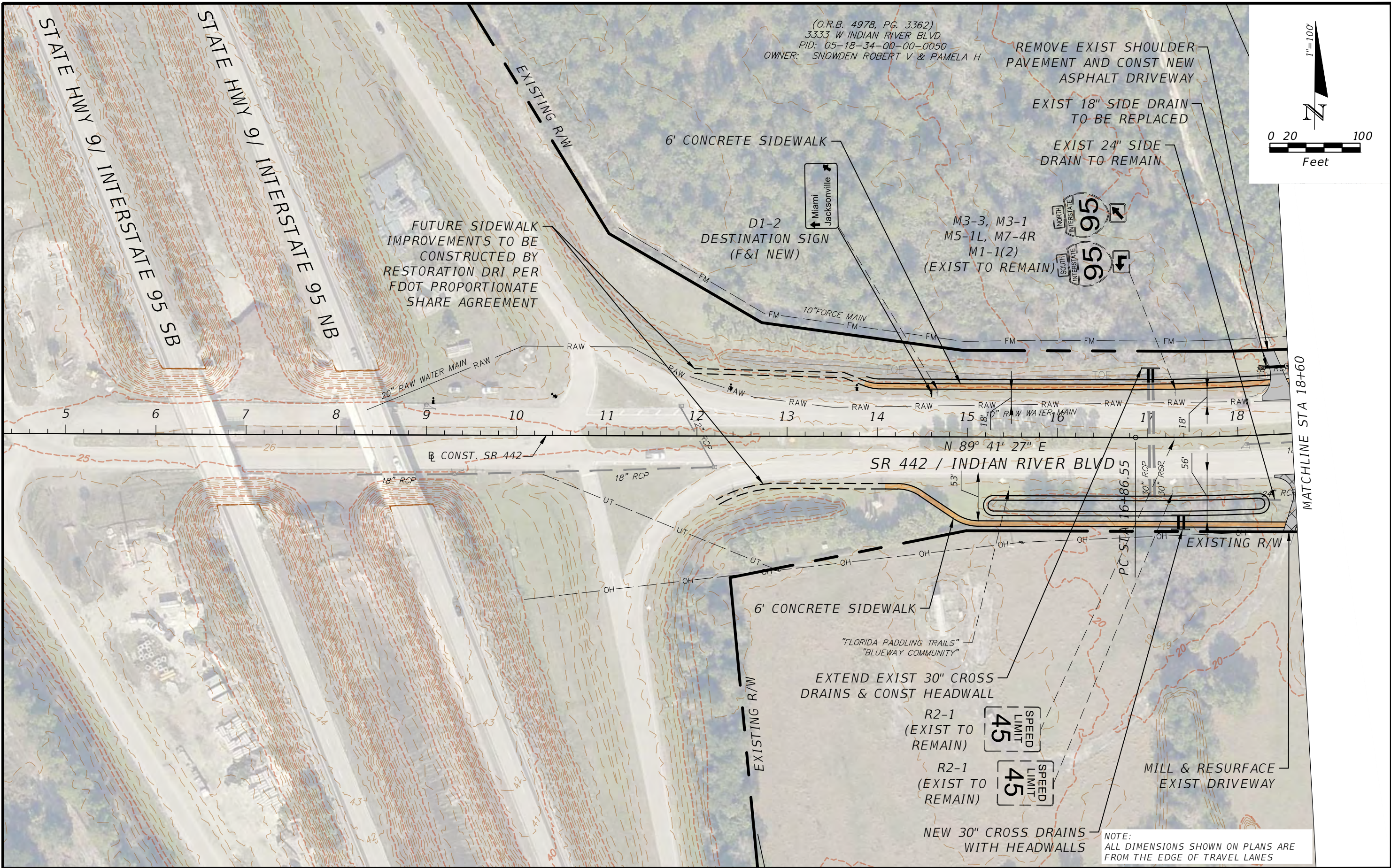
CONCEPT PLANS AND TYPICAL SECTION



REVISIONS		 RIVER TO SEA Transportation Planning Organization VISION - PLAN - IMPLEMENT	 TRAFFIC ENGINEERING DATA SOLUTIONS, INC. Phone 386.753.0558 80 Spring Vista Drive Fax 386.753.0778 DeBary, FL 32713 CERTIFICATE OF AUTHORIZATION NO. 27392	SR 442 SIDEWALKS FEASIBILITY STUDY			PROJECT LAYOUT SHEET OPTION A	SHEET NO.
DATE	DESCRIPTION			ROAD NO.	COUNTY	FINANCIAL PROJECT ID		1
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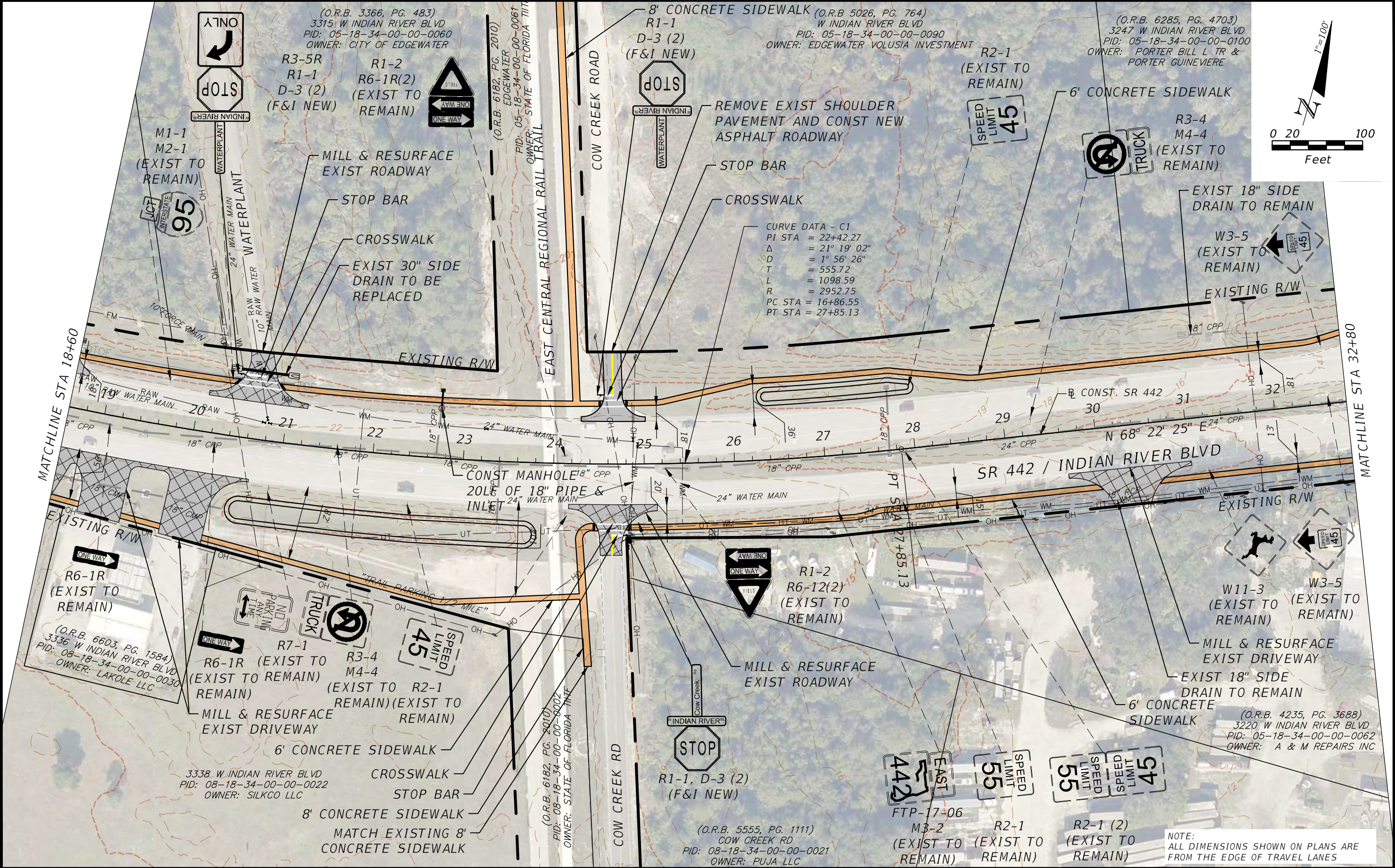


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SR 442 SIDEWALKS FEASIBILITY STUDY		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
442	VOLUSIA	----

CONCEPT PLAN OPTION A	

SHEET NO.
2

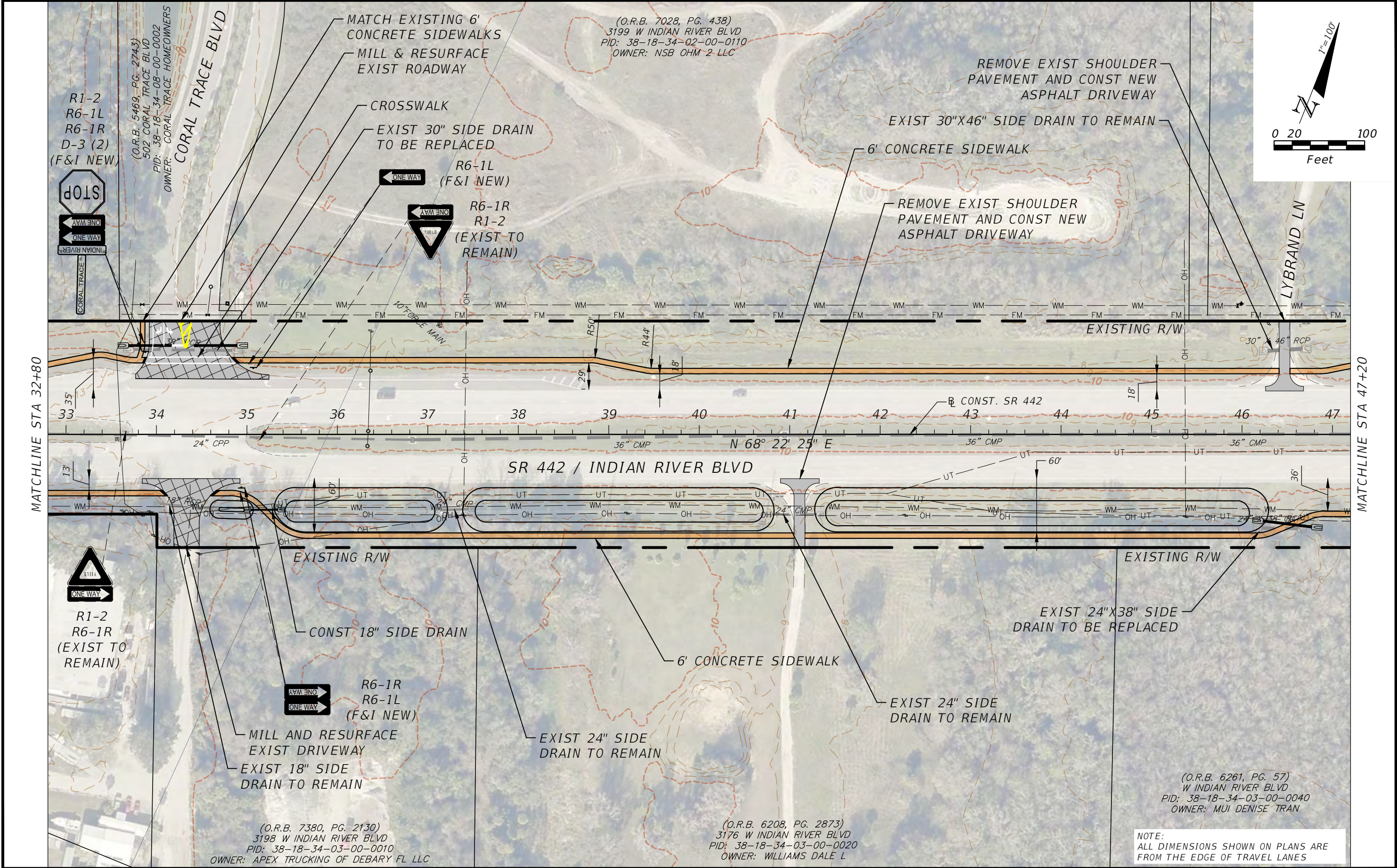


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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
442	VOLUSIA	----

CONCEPT PLAN OPTION A	



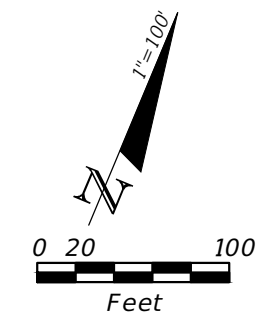
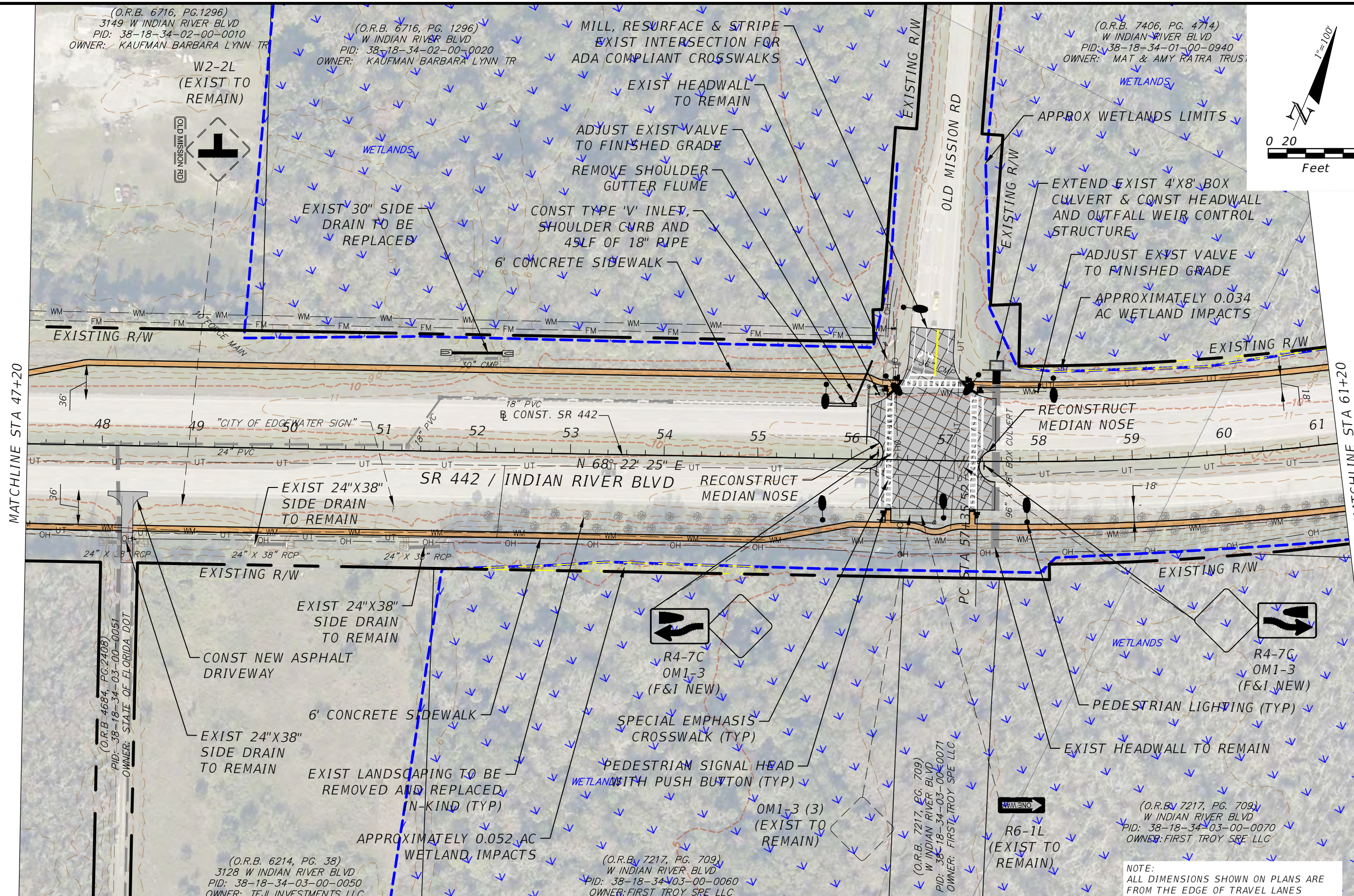
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SR 442 SIDEWALKS FEASIBILITY STUDY		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
442	VOLUSIA	---

CONCEPT PLAN OPTION A		SHEET NO. 4
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MATCHLINE STA 47+20

MATCHLINE STA 61+20

REVISIONS	
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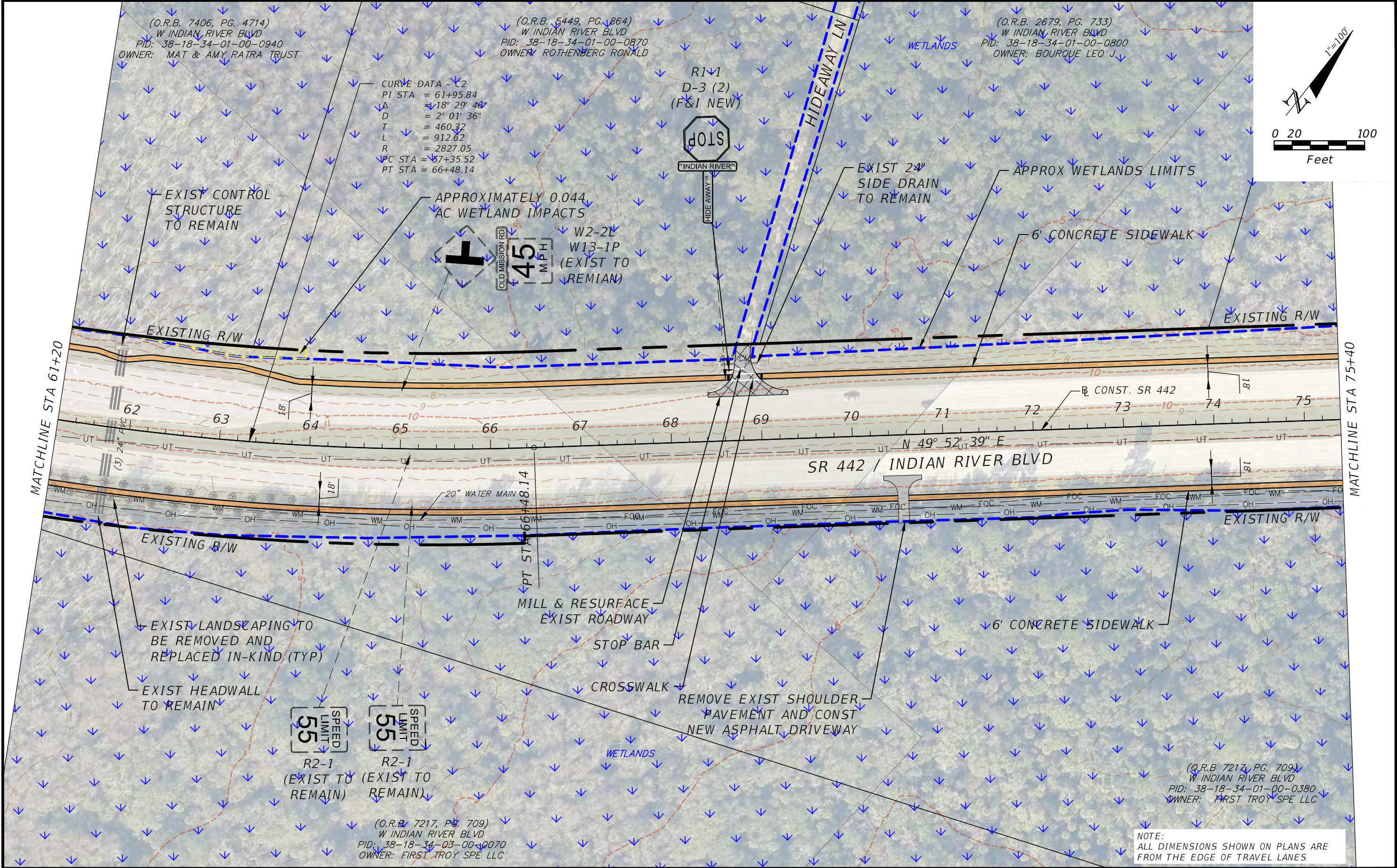


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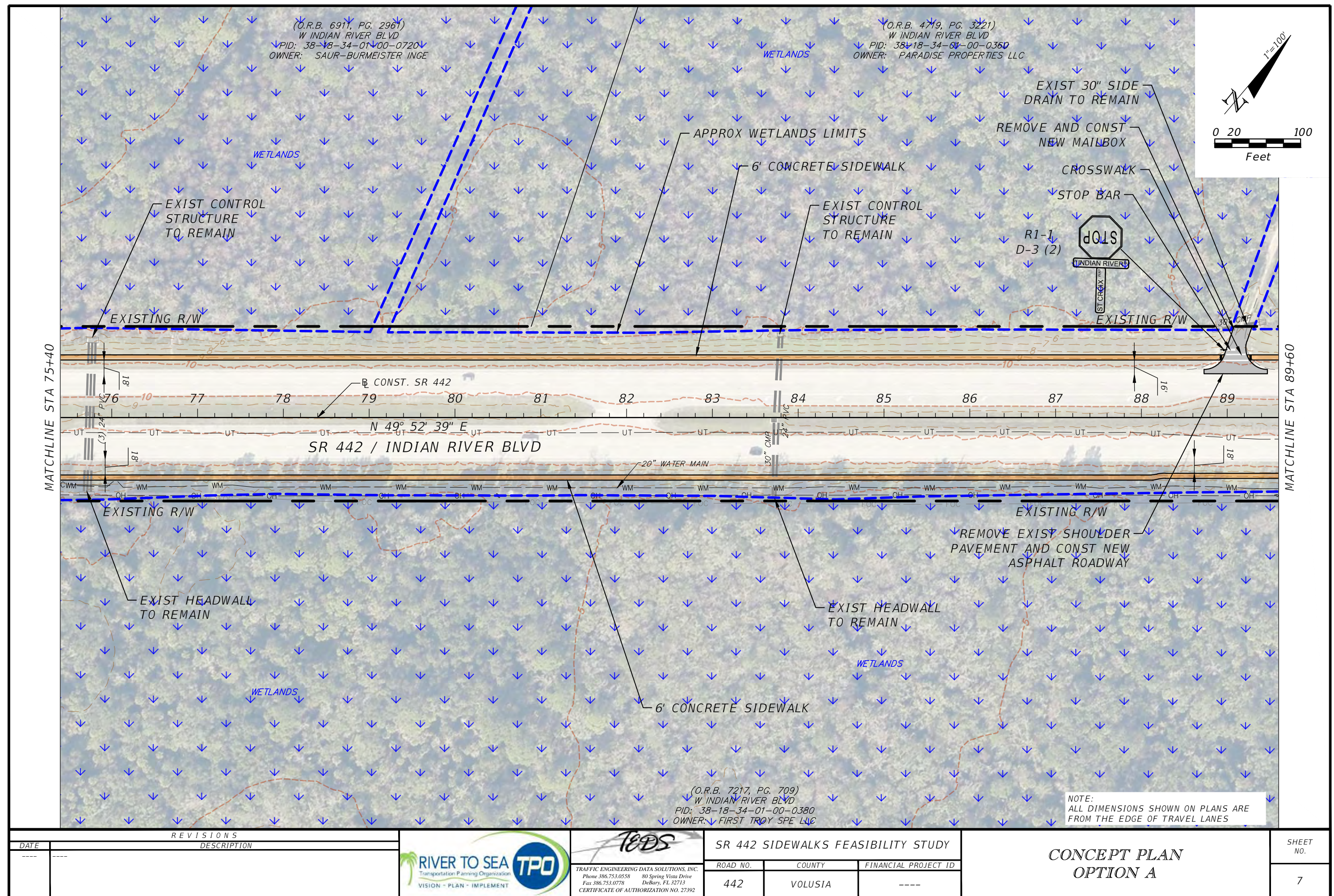
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
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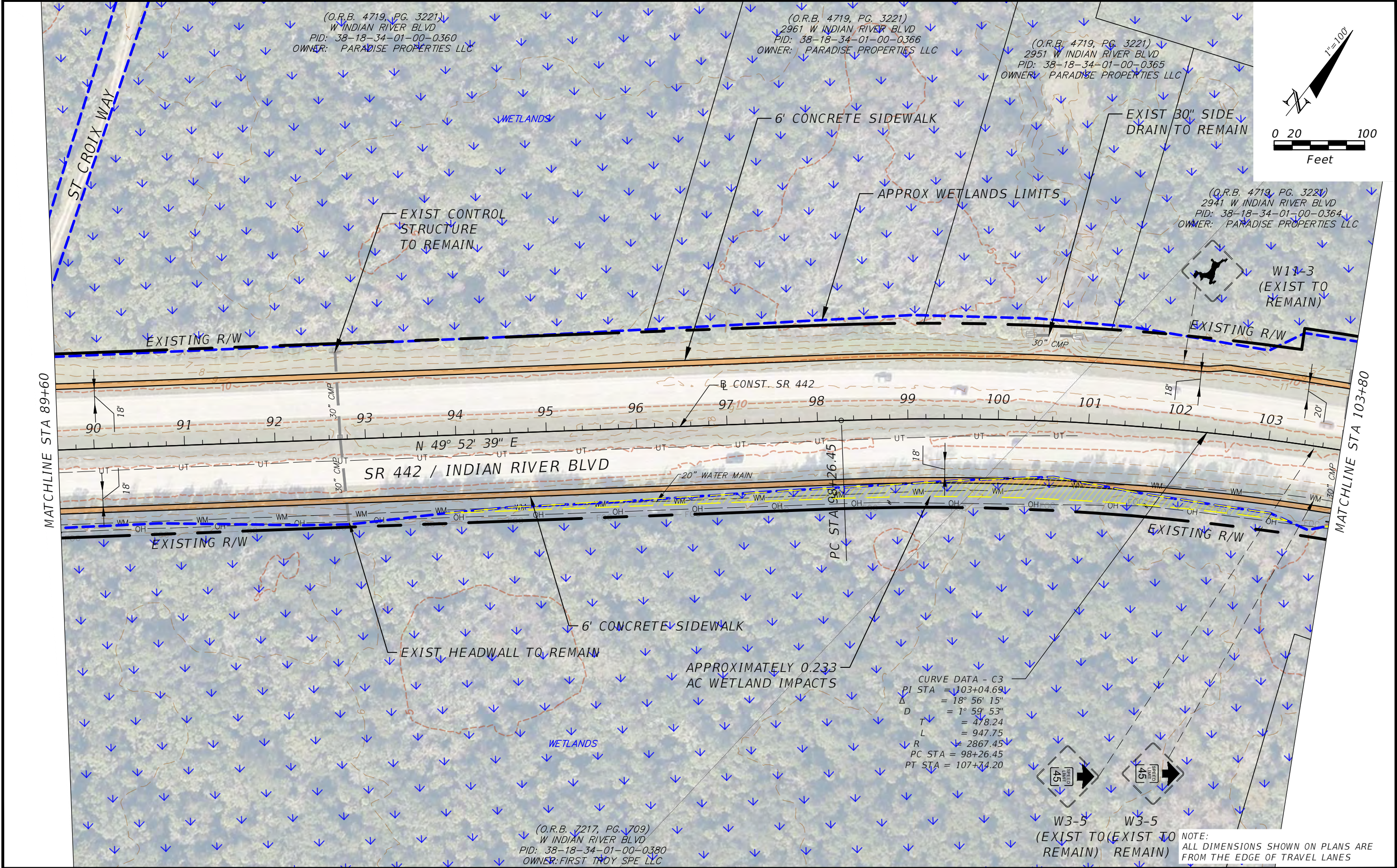
CONCEPT PLAN
OPTION A

SHEET NO.
5



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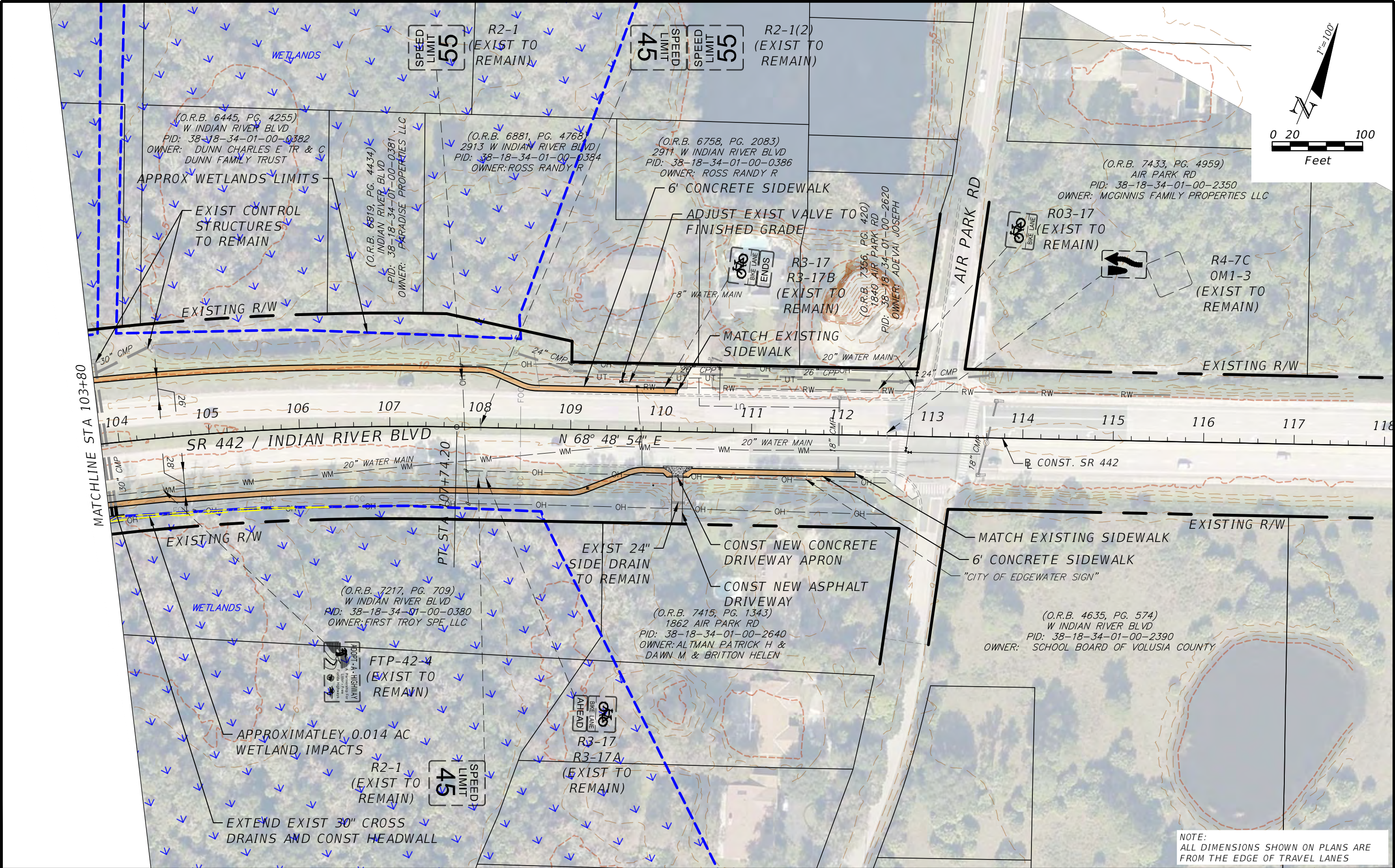
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DATE	DESCRIPTION	ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
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NOTE:
ALL DIMENSIONS SHOWN ON PLANS ARE
FROM THE EDGE OF TRAVEL LANES

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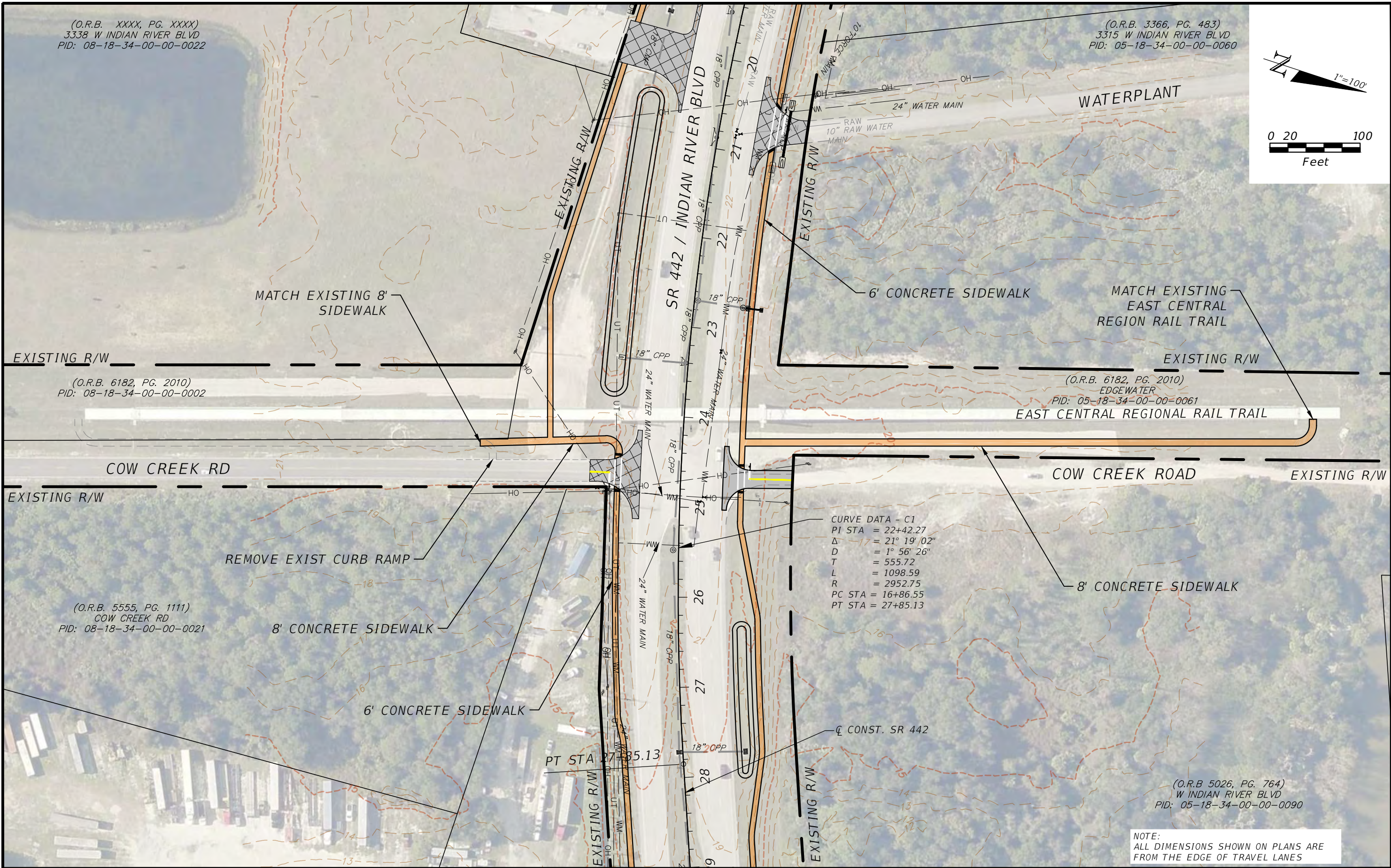
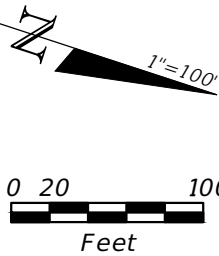
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SR 442 SIDEWALKS FEASIBILITY STUDY		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
442	VOLUSIA	----

CONCEPT PLAN OPTION A	
SHEET NO.	9

(O.R.B. XXXX, PG. XXXX)
3338 W INDIAN RIVER BLVD
PID: 08-18-34-00-00-0022

(O.R.B. 3366, PG. 483)
3315 W INDIAN RIVER BLVD
PID: 05-18-34-00-00-0060



REVISIONS	
DATE	DESCRIPTION
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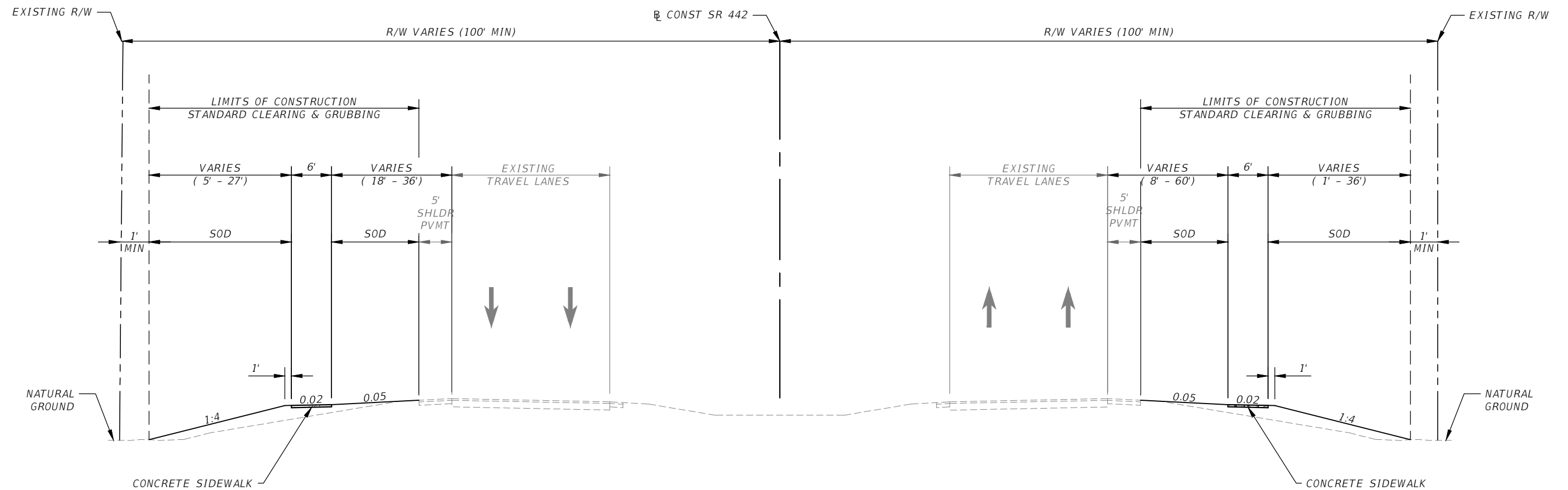


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Fax 386.753.0778 DeBary, FL 32713
CERTIFICATE OF AUTHORIZATION NO. 27392

SR 442 SIDEWALKS FEASIBILITY STUDY		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
442	VOLUSIA	----

CONCEPT PLAN OPTION A	

SHEET NO.
10



TYPICAL SECTION
SR 442 (INDIAN RIVER BLVD)
STA 13+85.00 TO STA 112+15.00

ROAD DATA
POSTED SPEED LIMIT: 55 MPH
FUN CLASS: URBAN MINOR ART
AC MAN CLS: ACCESS CLASS 03

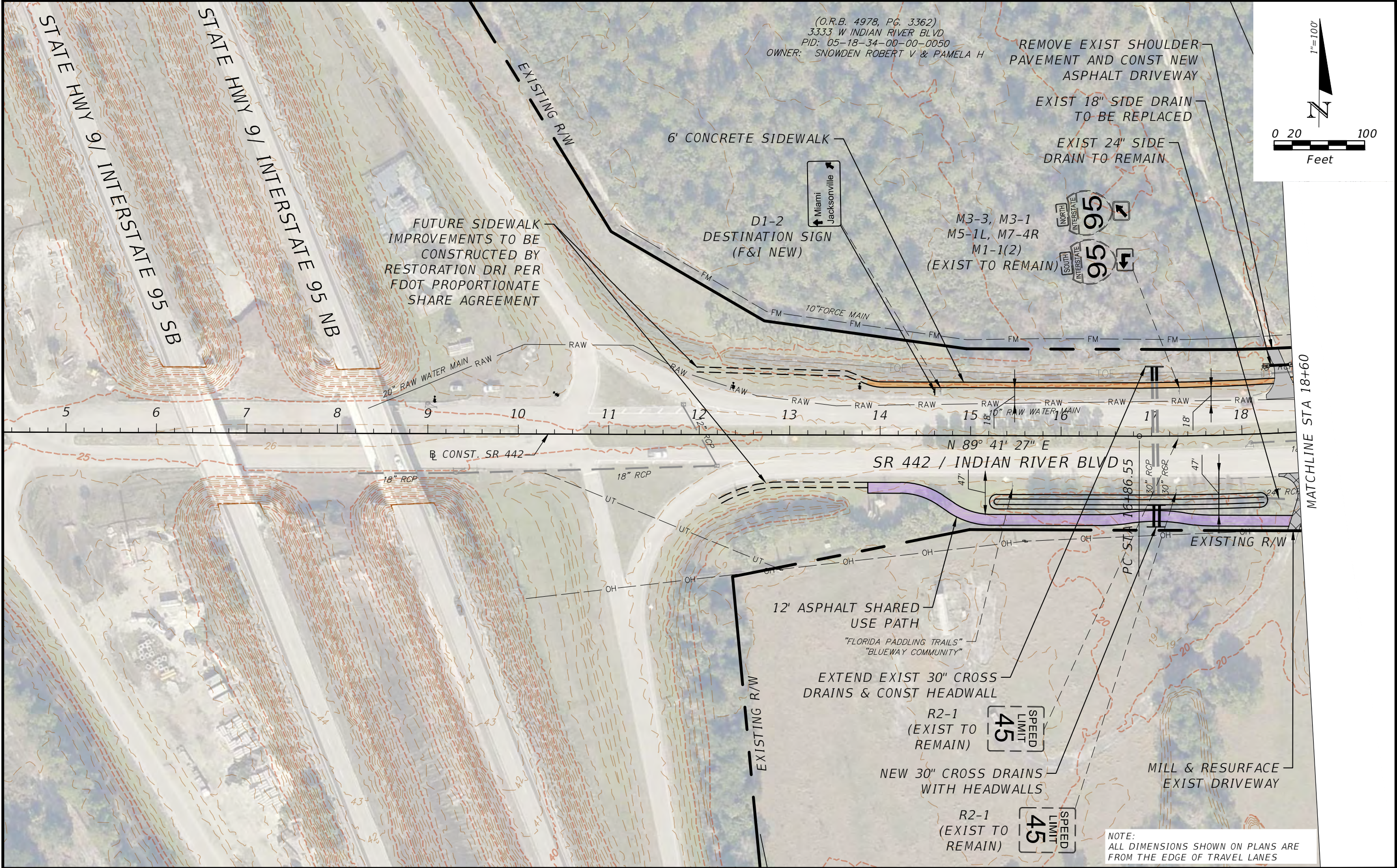
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		Mike Thompson 7/24/2018 11:53:45 AM			442	VOLUSIA	----	



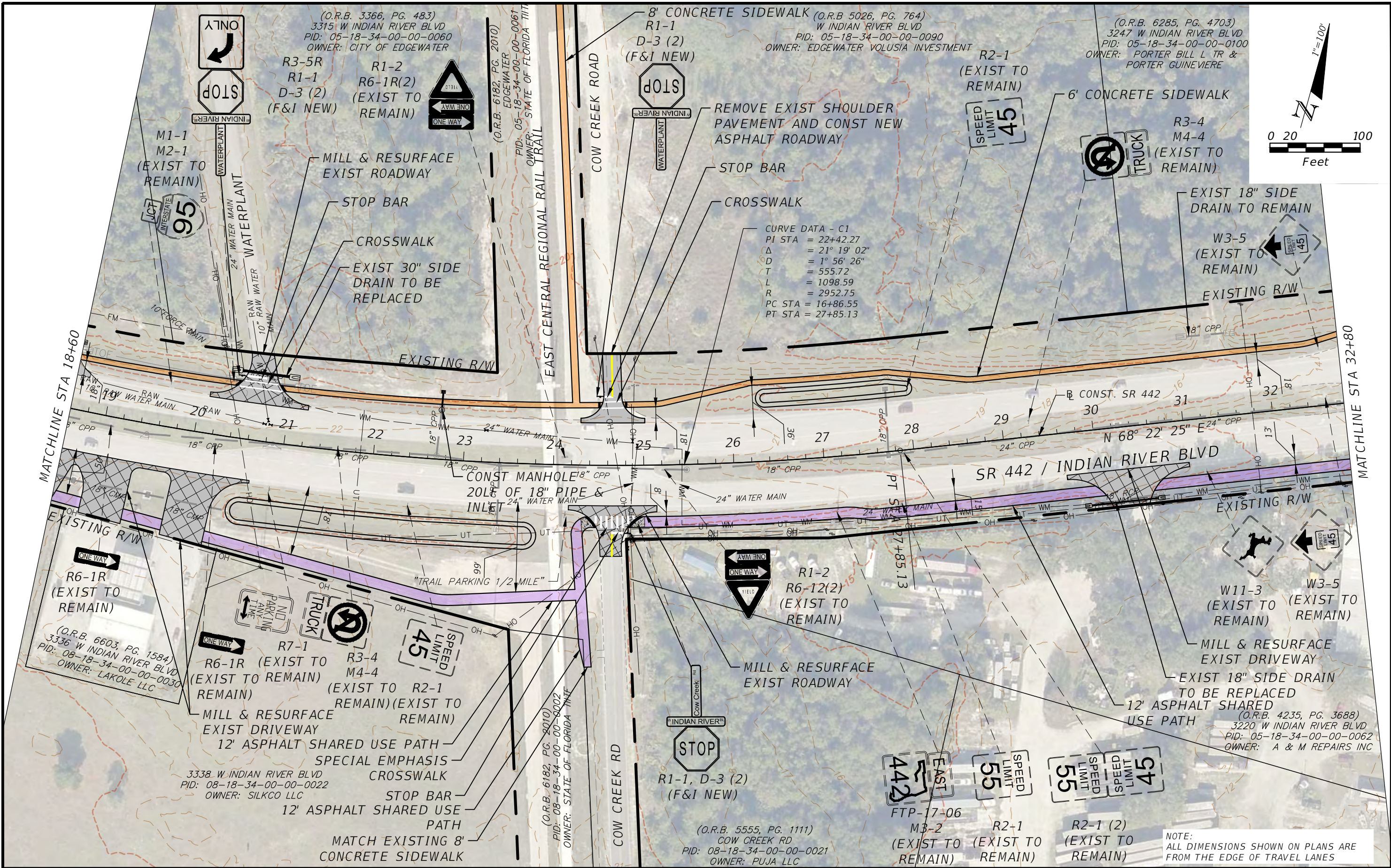
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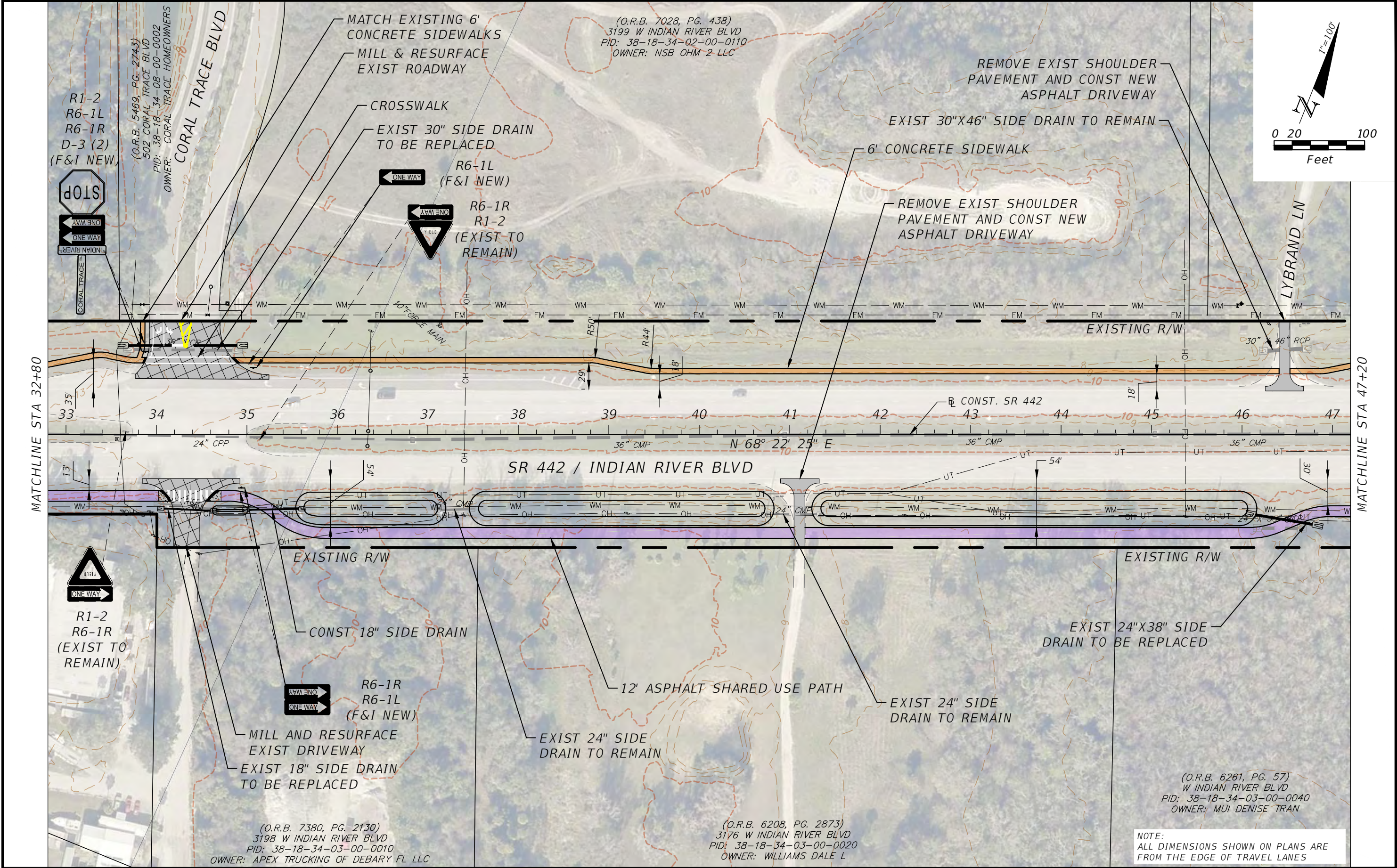


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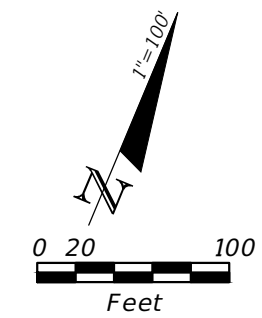
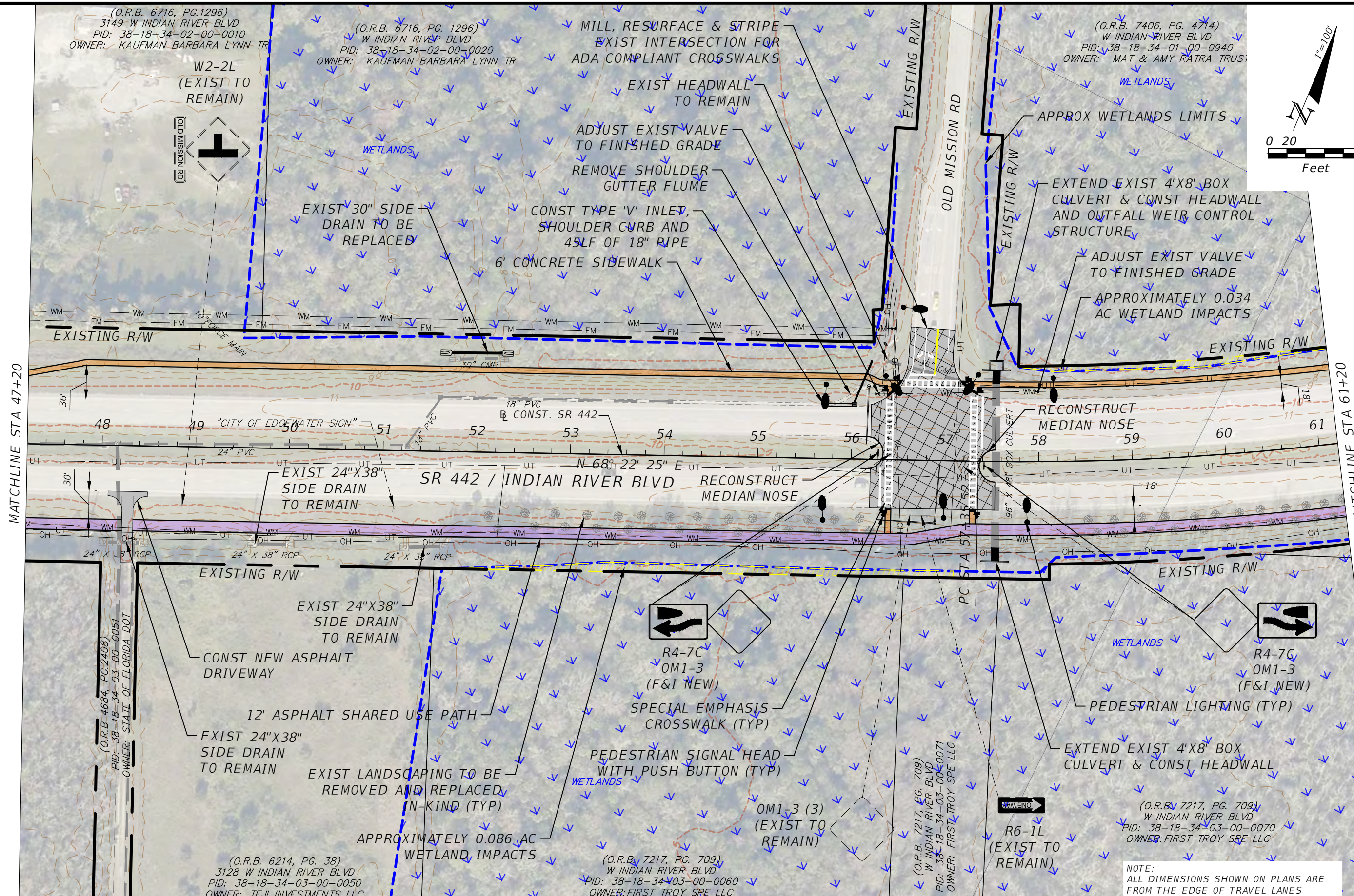
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
442	VOLUSIA	----

CONCEPT PLAN OPTION B	

SHEET NO.
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DATE	DESCRIPTION			ROAD NO.	COUNTY	FINANCIAL PROJECT ID		4
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REVISIONS		SR 442 SIDEWALKS FEASIBILITY STUDY			CONCEPT PLAN OPTION B	SHEET NO. 5
DATE	DESCRIPTION					
		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
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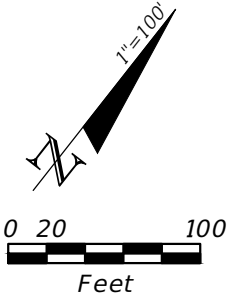
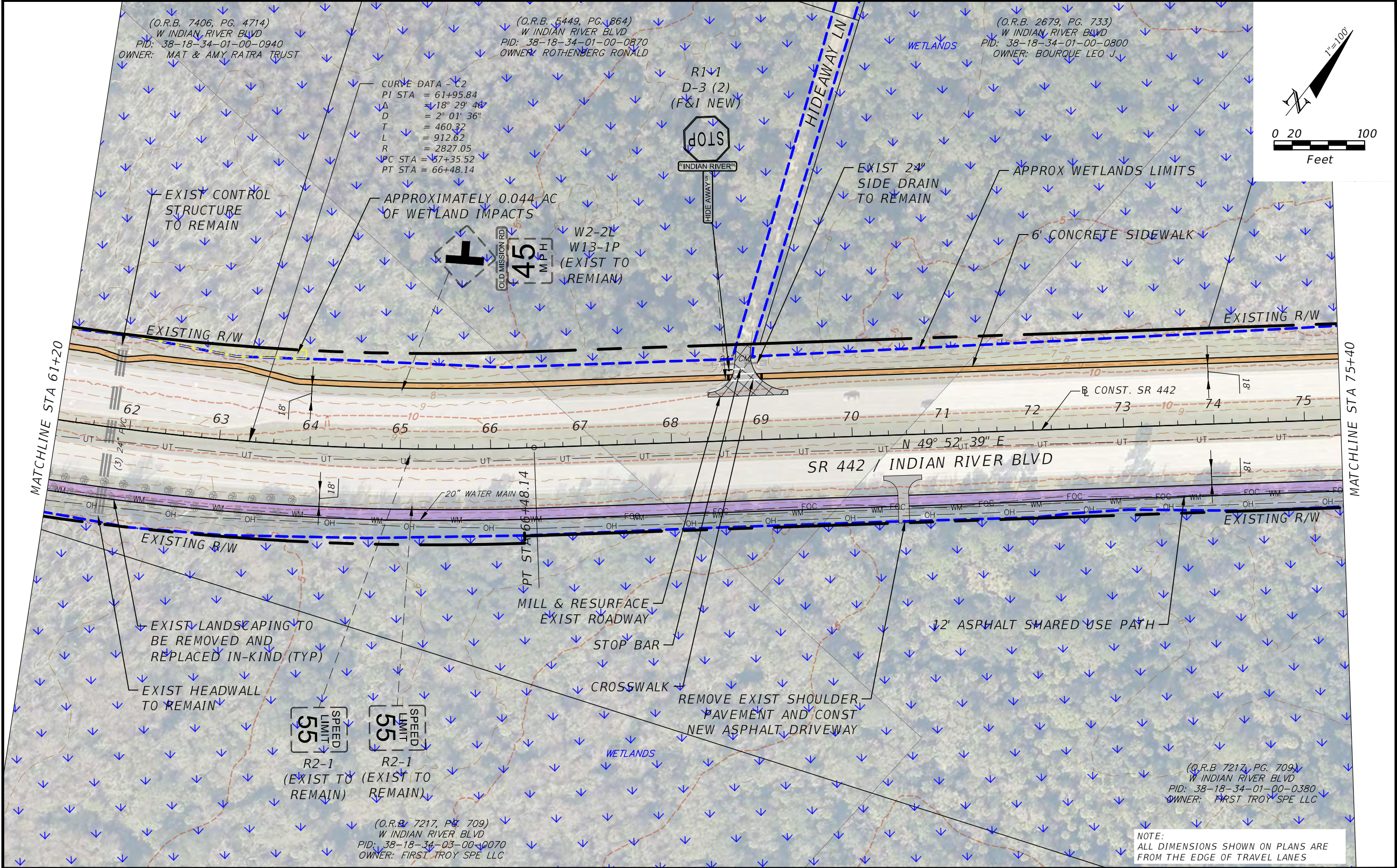


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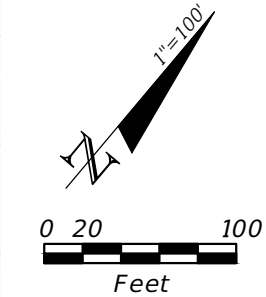
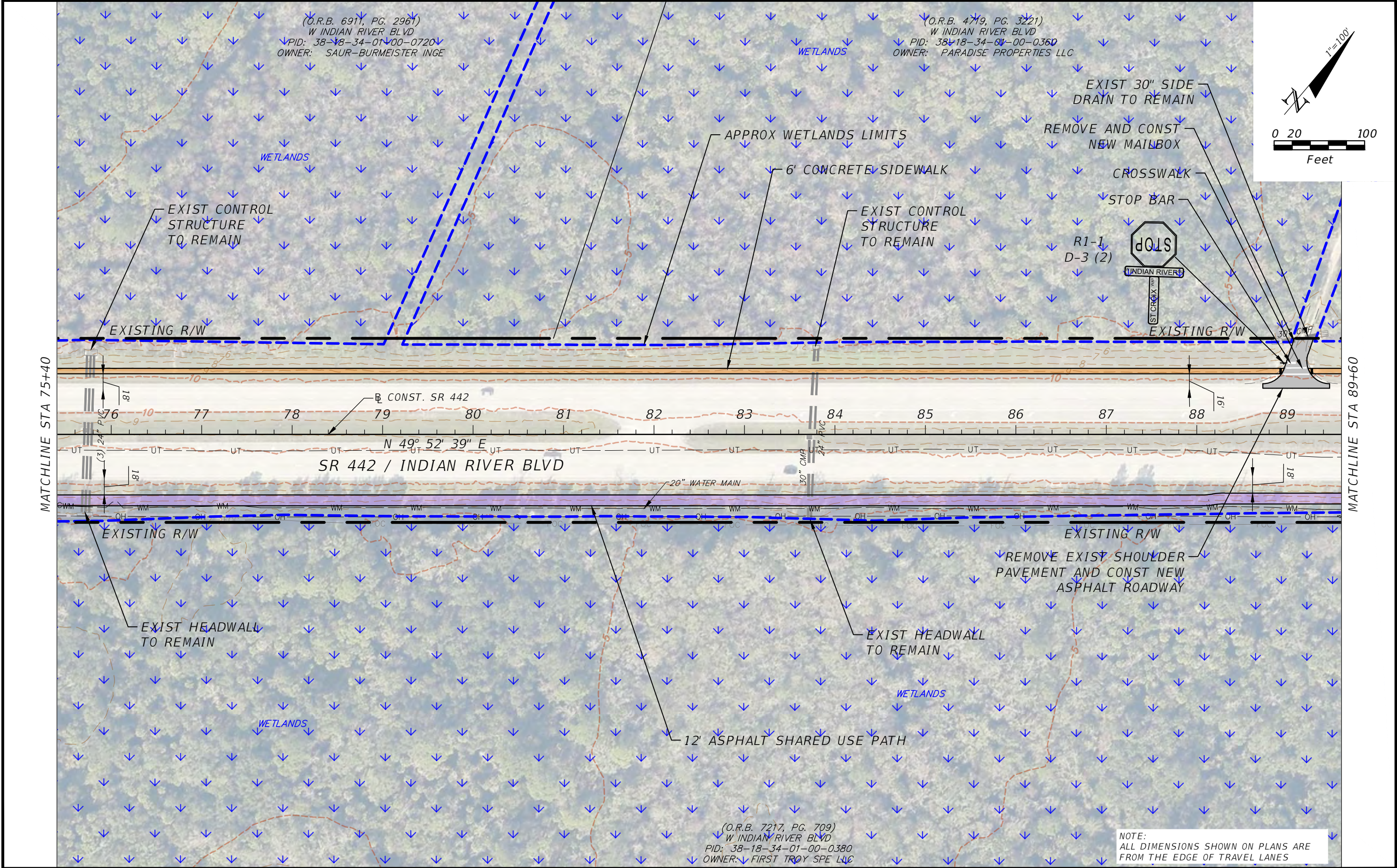


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DATE	DESCRIPTION								
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					442	VOLUSIA	---		



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DATE	DESCRIPTION

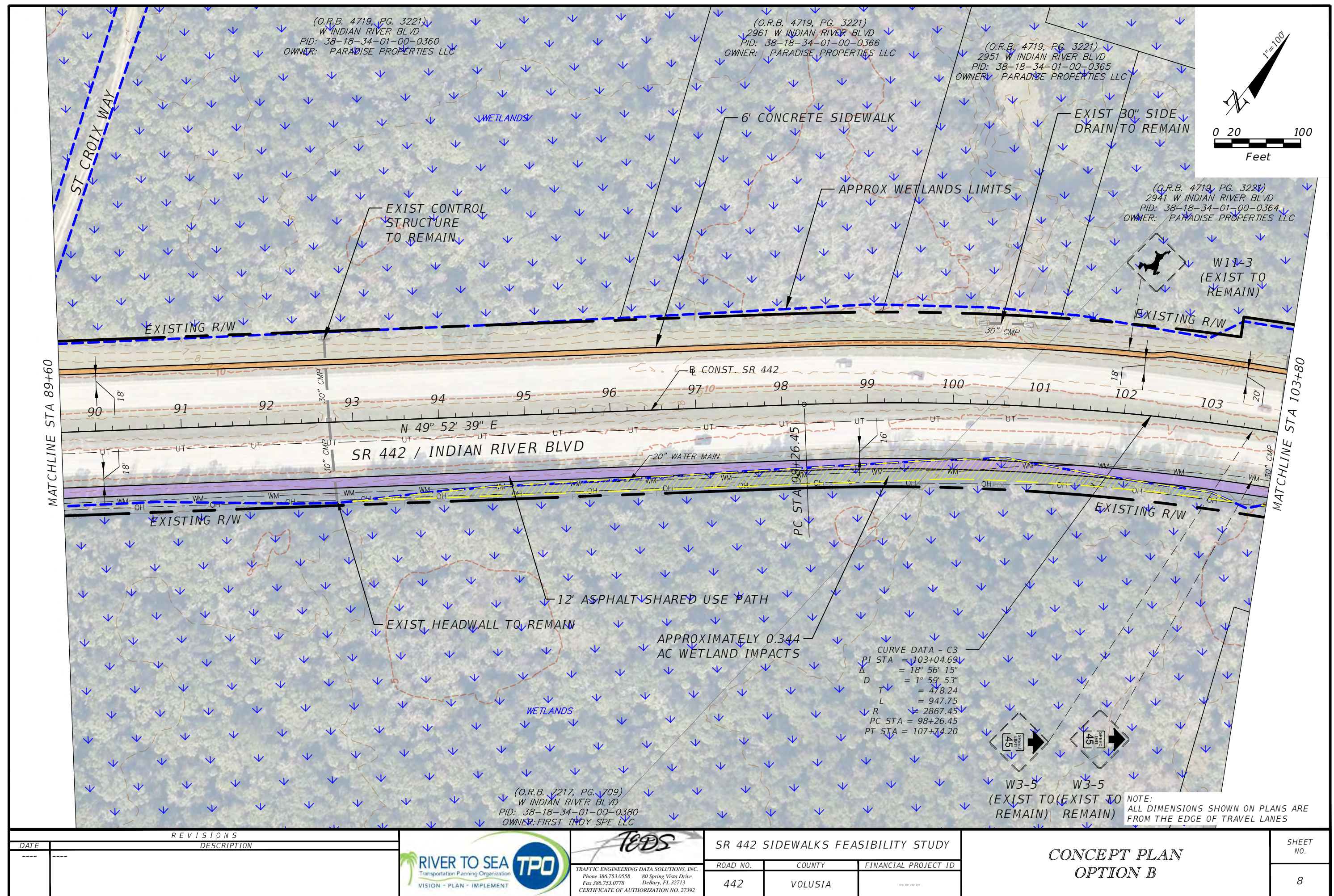


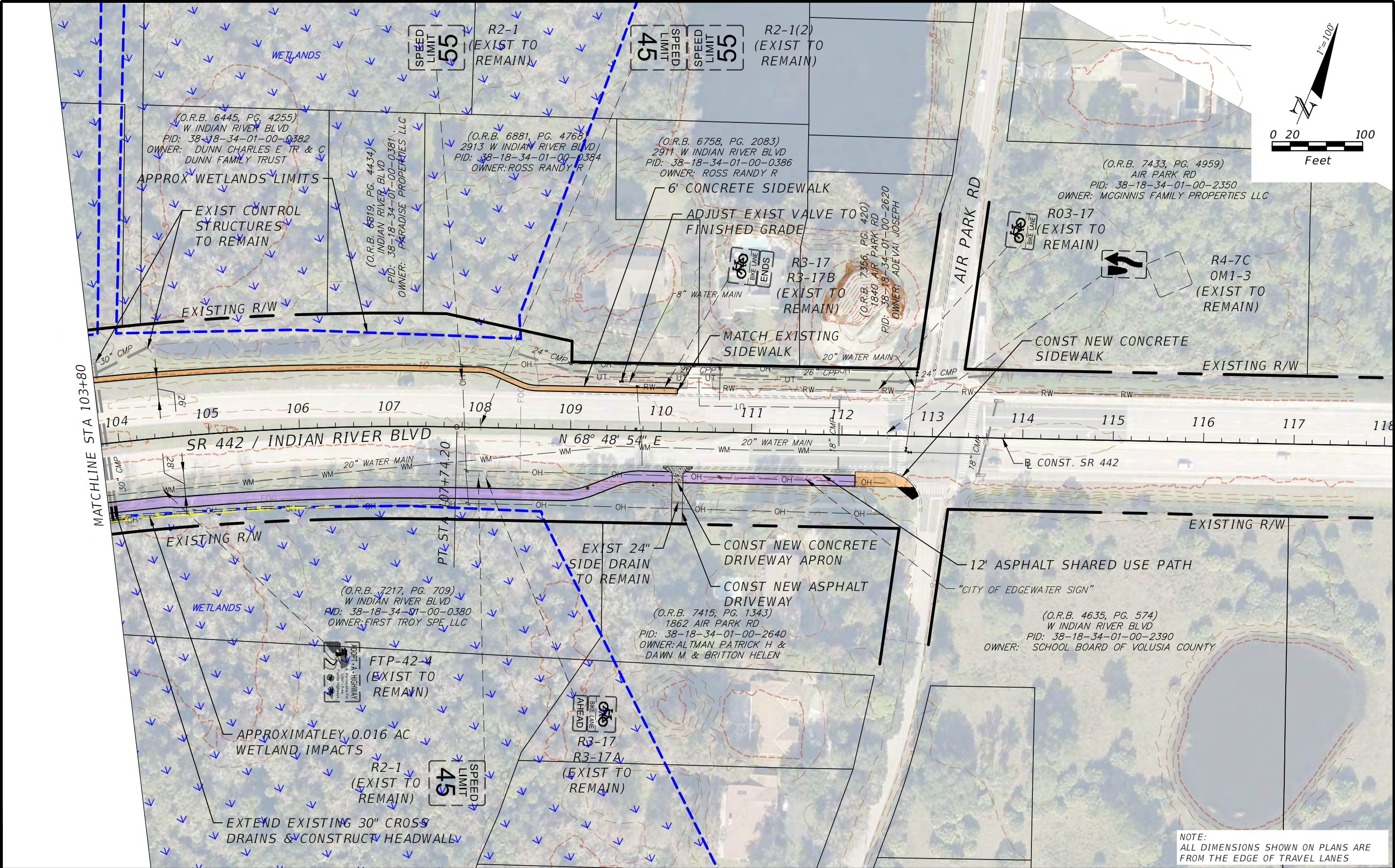
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 Fax 386.753.0778 DeBary, FL 32713
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SR 442 SIDEWALKS FEASIBILITY STUDY		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
442	VOLUSIA	----

CONCEPT PLAN OPTION B	
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SHEET NO.
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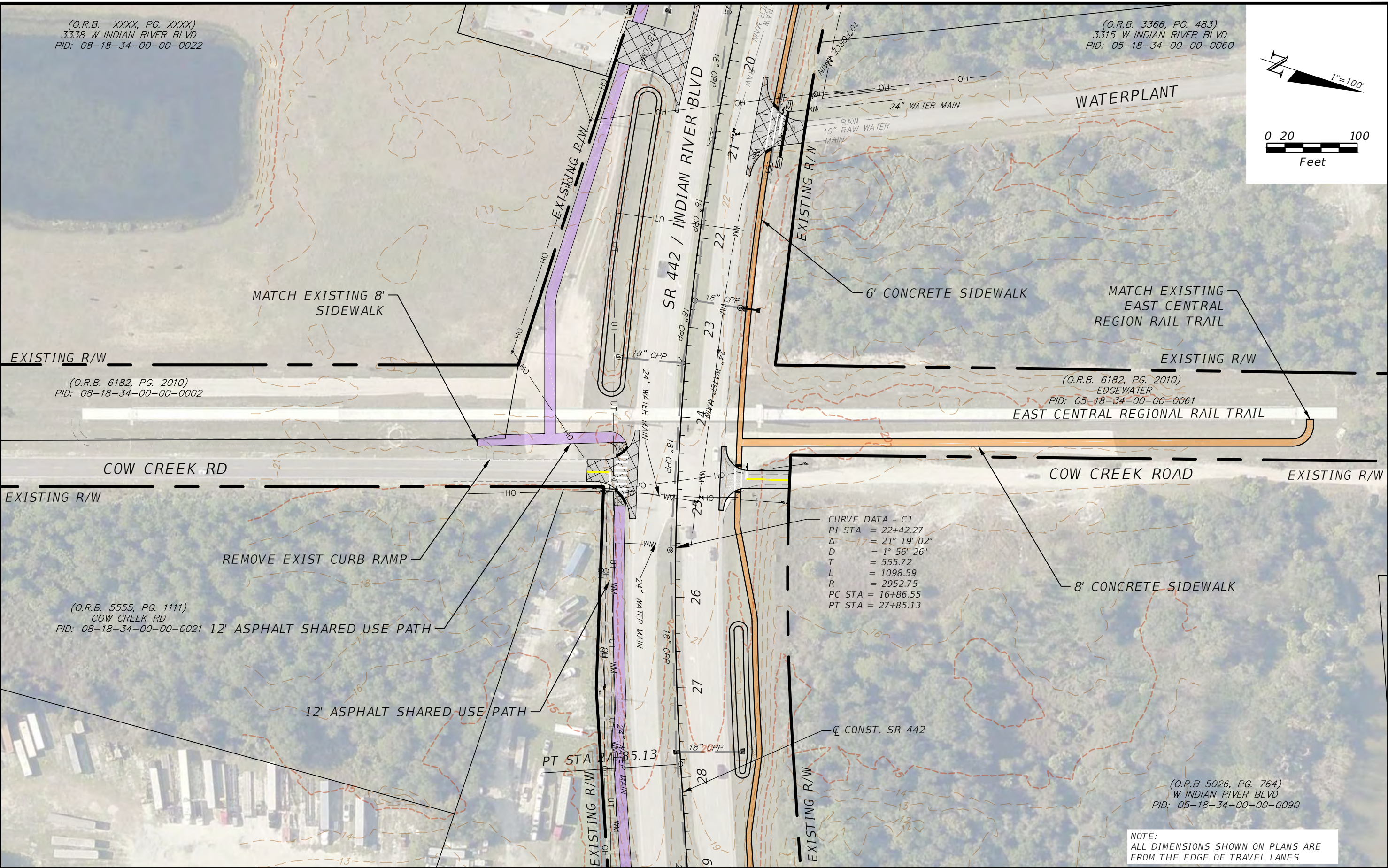
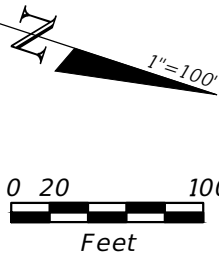
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CERTIFICATE OF AUTHORIZATION NO. 27392

SR 442 SIDEWALKS FEASIBILITY STUDY		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
442	VOLUSIA	---

CONCEPT PLAN OPTION B	
SHEET NO.	
9	

(O.R.B. XXXX, PG. XXXX)
3338 W INDIAN RIVER BLVD
PID: 08-18-34-00-00-0022

(O.R.B. 3366, PG. 483)
3315 W INDIAN RIVER BLVD
PID: 05-18-34-00-00-0060



(O.R.B. 5555, PG. 1111)
COW CREEK RD
PID: 08-18-34-00-00-0021

(O.R.B. 6182, PG. 2010)
EDGEWATER
PID: 05-18-34-00-00-0061

(O.R.B. 5026, PG. 764)
W INDIAN RIVER BLVD
PID: 05-18-34-00-00-0090

NOTE:
ALL DIMENSIONS SHOWN ON PLANS ARE
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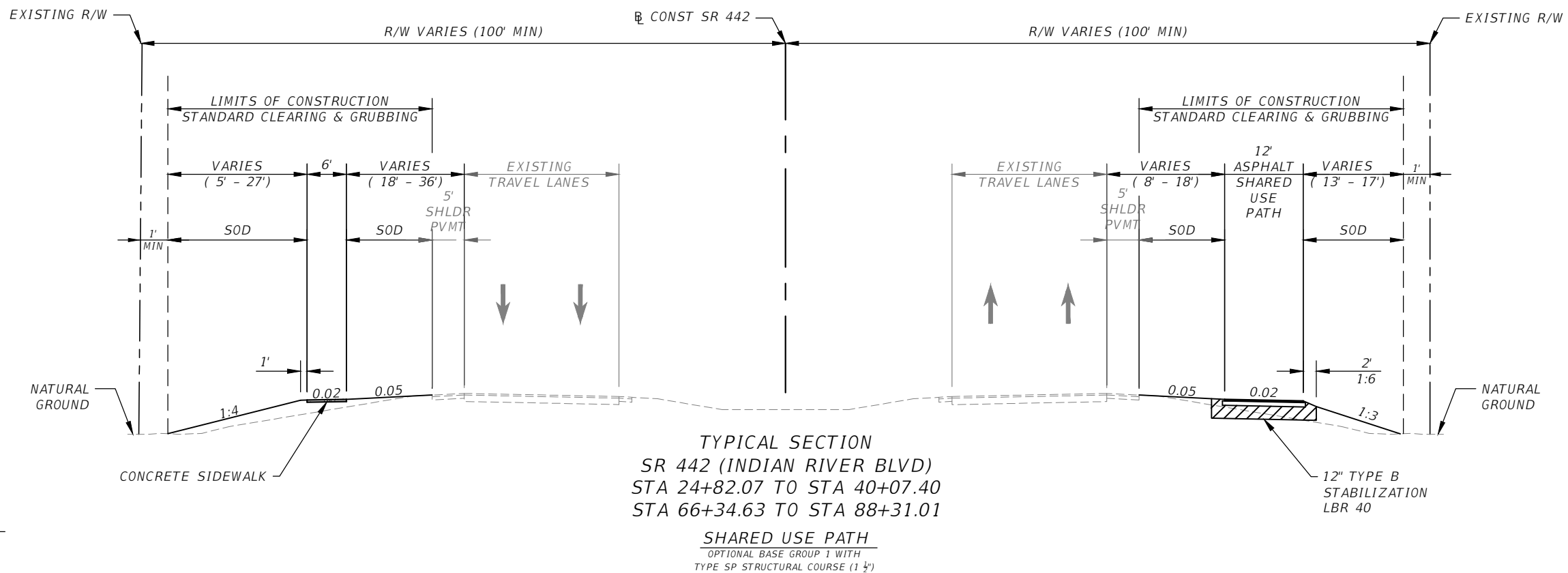
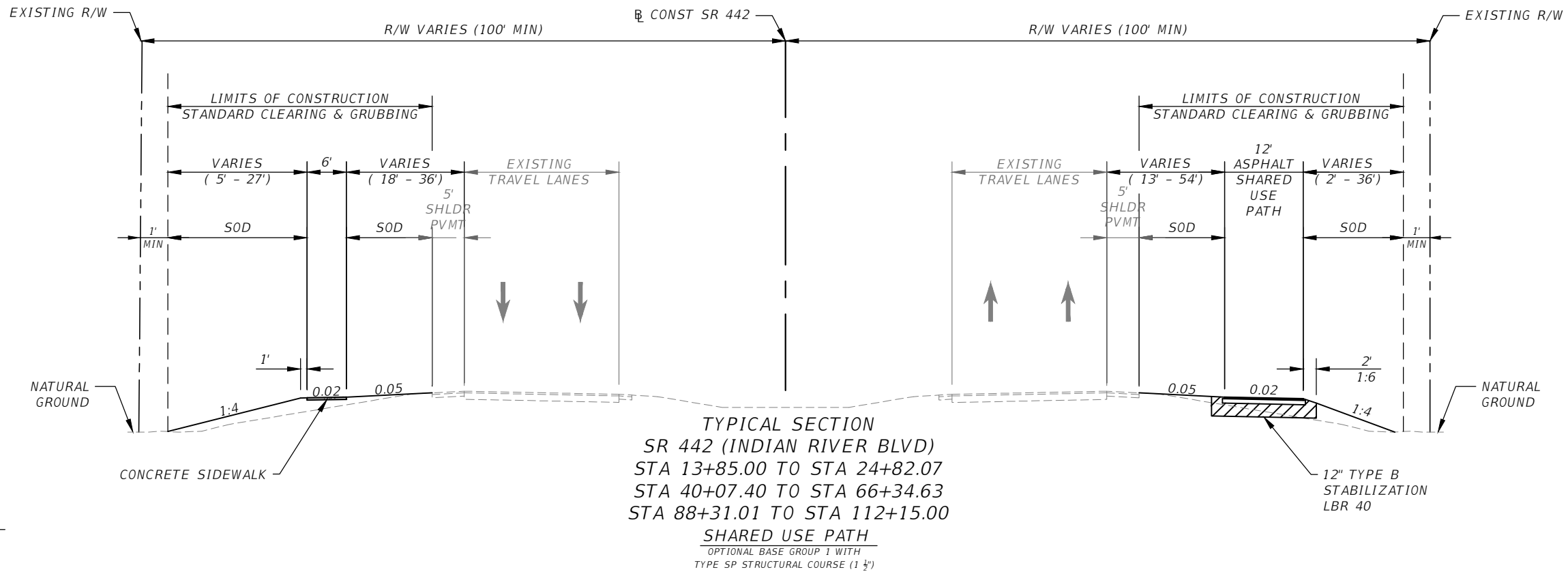


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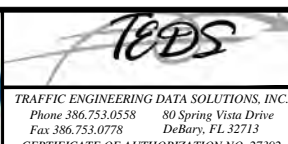
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
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DATE	DESCRIPTION			ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
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APPENDIX C

CONTEXT CLASSIFICATION MAP

CONTEXT CLASSIFICATION

The context classification system broadly identifies the various built environments existing in Florida, as illustrated in Figure 2. State roadways will extend through a variety of context classifications. Figure 2 should not be taken literally to imply all roadways will have every context classification or that context classifications occur in the sequence shown. FDOT's context classification system describes the general characteristics of the land use, development patterns, and roadway connectivity along a roadway, providing cues as to the types of uses and user groups that will likely utilize the roadway. The context classification

of a roadway will inform FDOT's planning, PD&E, design, construction, and maintenance approaches to ensure that state roadways are supportive of safe and comfortable travel for their anticipated users. Identifying the context classification is a step in planning and design, as different context classifications will have different design criteria and standards.

The use of context classifications to determine criteria for roadway design elements is consistent with national best practices and direction, including the National Cooperative Highway Research Program

FIGURE 2 FDOT CONTEXT CLASSIFICATIONS



C1-Natural
Lands preserved in a natural or wilderness condition, including lands unsuitable for settlement due to natural conditions.

C2-Rural
Sparsely settled lands; may include agricultural land, grassland, woodland, and wetlands.

C2T-Rural Town
Small concentrations of developed areas immediately surrounded by rural and natural areas; includes many historic towns.

C3R-Suburban Residential
Mostly residential uses within large blocks and a disconnected or sparse roadway network.

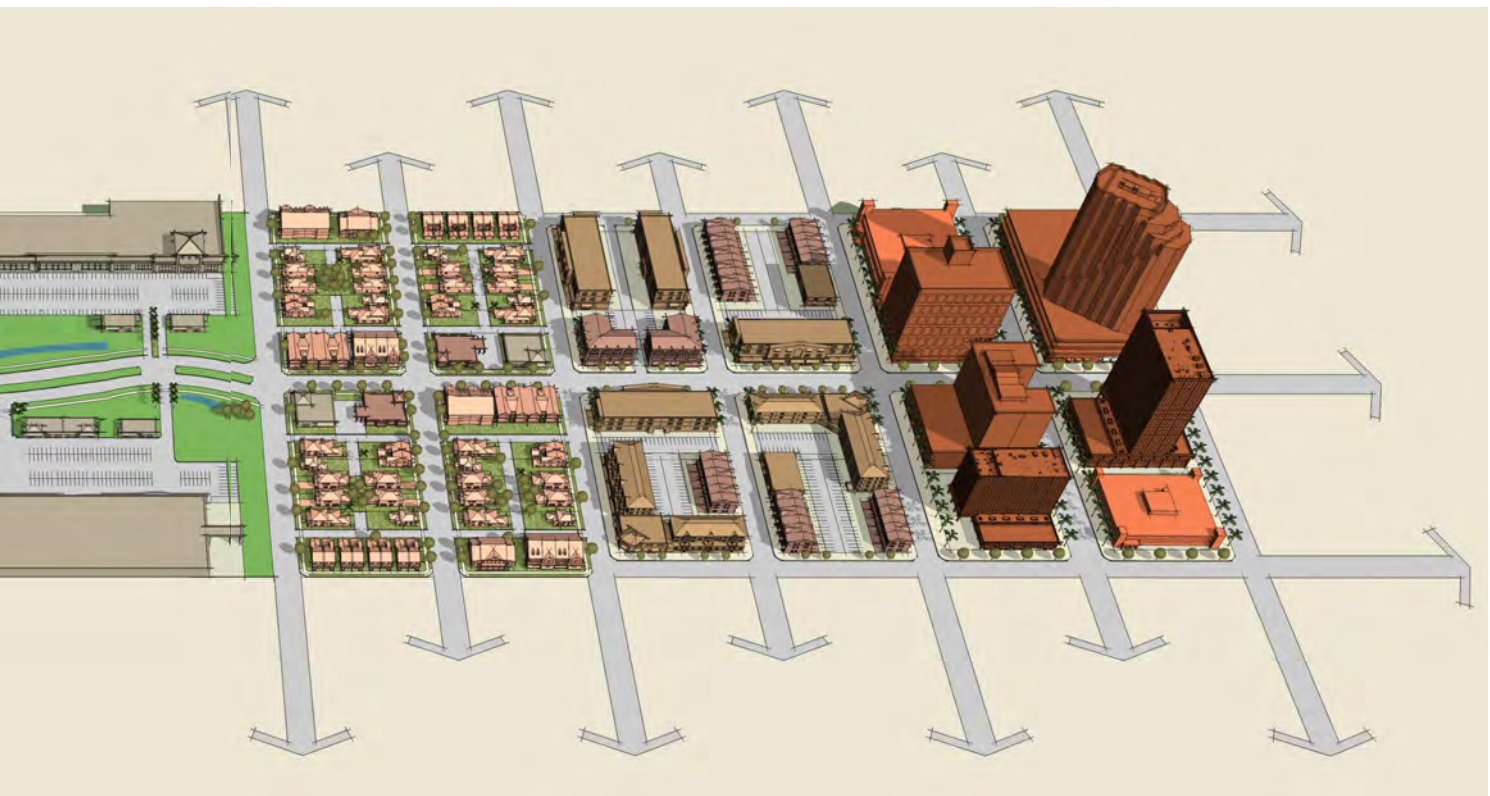
(NCHRP) that informs Federal Highway Administration (FHWA) and American Association of State Highway Transportation Officials (AASHTO) guidance.

NCHRP Report 855: An Expanded Functional Classification System for Highways and Streets

proposes a similar context-based approach to design that incorporates context, user needs, and transportation functions into the design process. This research was born out of a need to better define contexts beyond urban and rural classifications, and to incorporate multimodal needs into the existing functional classification system.

This document outlines the steps to determine a roadway's context classification. Measures used to determine the context classification are presented, and a process to define the context classification is outlined for:

- All projects on existing roadways and for projects that propose new roadways and are in the PD&E or design phases
- Projects evaluating new roadways in the planning and ETDM screening phases



C3C-Suburban Commercial

Mostly non-residential uses with large building footprints and large parking lots within large blocks and a disconnected or sparse roadway network.

C4-Urban General

Mix of uses set within small blocks with a well-connected roadway network. May extend long distances. The roadway network usually connects to residential neighborhoods immediately along the corridor or behind the uses fronting the roadway.

C5-Urban Center

Mix of uses set within small blocks with a well-connected roadway network. Typically concentrated around a few blocks and identified as part of a civic or economic center of a community, town, or city.

C6-Urban Core

Areas with the highest densities and building heights, and within FDOT classified Large Urbanized Areas (population >1,000,000). Many are regional centers and destinations. Buildings have mixed uses, are built up to the roadway, and are within a well-connected roadway network.

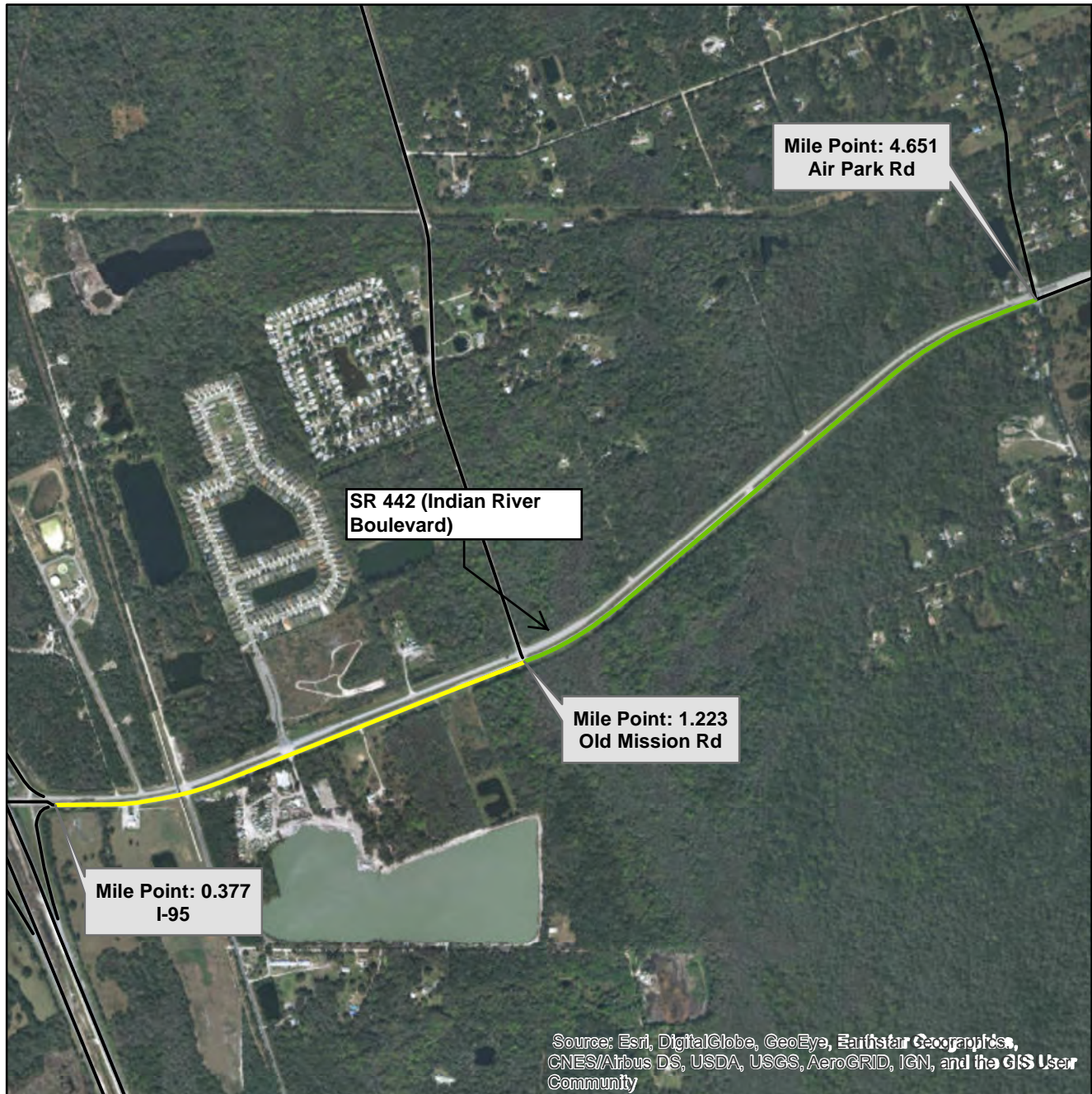
Context Classification Map

SR-442 - 79210000

City of Edgewater - Volusia County




Begin Mile Point: 0.377 (I-95)

End Mile Point: 2.282 (Air Park Rd)



Legend

Context Class

-  C2
-  C3C
-  Road Network

Map Created: 2/16/18



APPENDIX D

STATE ROAD 442 WIDENING PLANS

COMPONENTS OF CONTRACT PLANS SET:

ROADWAY PLANS
SIGNING AND PAVEMENT MARKING PLANS
SIGNALIZATION PLANS

A DETAILED INDEX APPEARS ON THE
KEY SHEET OF EACH COMPONENT

INDEX OF ROADWAY PLANS

SHEET NO.	SHEET DESCRIPTION
1	KEY SHEET
DM1 - DM3	DRAINAGE MAPS
2 - 3	TYPICAL SECTIONS
4 - 4A	SUMMARY OF QUANTITIES
5 - 8	BOX CULVERT DATA SHEET
9 - 11	SUMMARY OF DRAINAGE STRUCTURES
12	SUMMARY OF ALTERNATE PIPE MATERIAL
13 - 14	REFERENCE POINTS
14A	ROADWAY GENERAL NOTES
15 - 23	ROADWAY PLAN-PROFILES
24	MISSION ROAD PLAN-PROFILE
25 - 35	DRAINAGE STRUCTURES - S.R. 442
36	DRAINAGE STRUCTURES - MISSION ROAD
37 - 39	DRAINAGE STRUCTURES - W.R.A. 'B'
40	WATER RETENTION AREA 'B'
41	WATER RETENTION AREA 'B' SECTIONS
42	OUTFALL TO W.R.A. 'B'
43	DRAINAGE DETAILS
44	EMBANKMENT DETAIL
45 - 45D	ROADWAY SOIL SURVEY
46 - 94	CROSS SECTIONS - S.R. 442
95 - 96	CROSS SECTIONS - MISSION ROAD
97 - 123	CROSS SECTIONS - W.R.A. 'B'
124 - 141	TRAFFIC CONTROL SHEETS

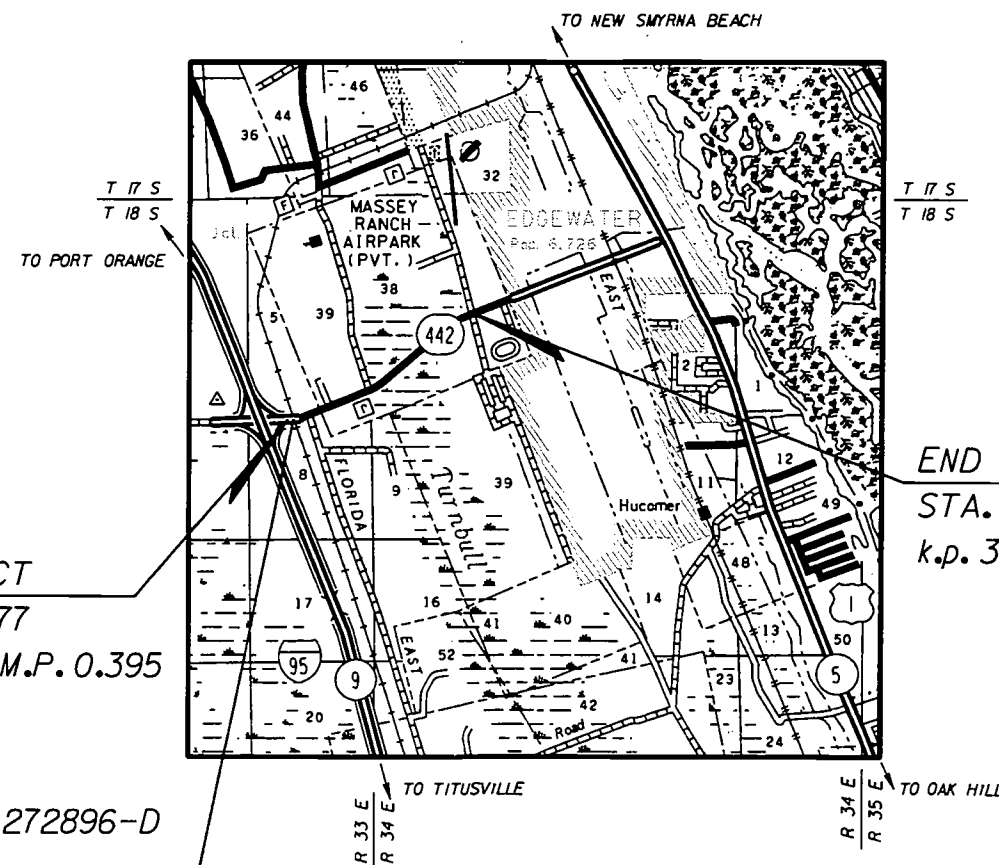
GOVERNING STANDARDS AND SPECIFICATIONS:
FLORIDA DEPARTMENT OF TRANSPORTATION,
ROADWAY AND TRAFFIC DESIGN STANDARDS
DATED JANUARY 2000, AND STANDARD
SPECIFICATIONS FOR ROAD AND BRIDGE
CONSTRUCTION DATED 2000, AS AMENDED
BY CONTRACT DOCUMENTS

REVISIONS

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

CONTRACT PLANS

FINANCIAL PROJECT ID NO. 240812-1-52-01
STATE PROJECT NO. 79210-3505
(NON-FEDERAL FUNDS)
VOLUSIA COUNTY
STATE ROAD 442



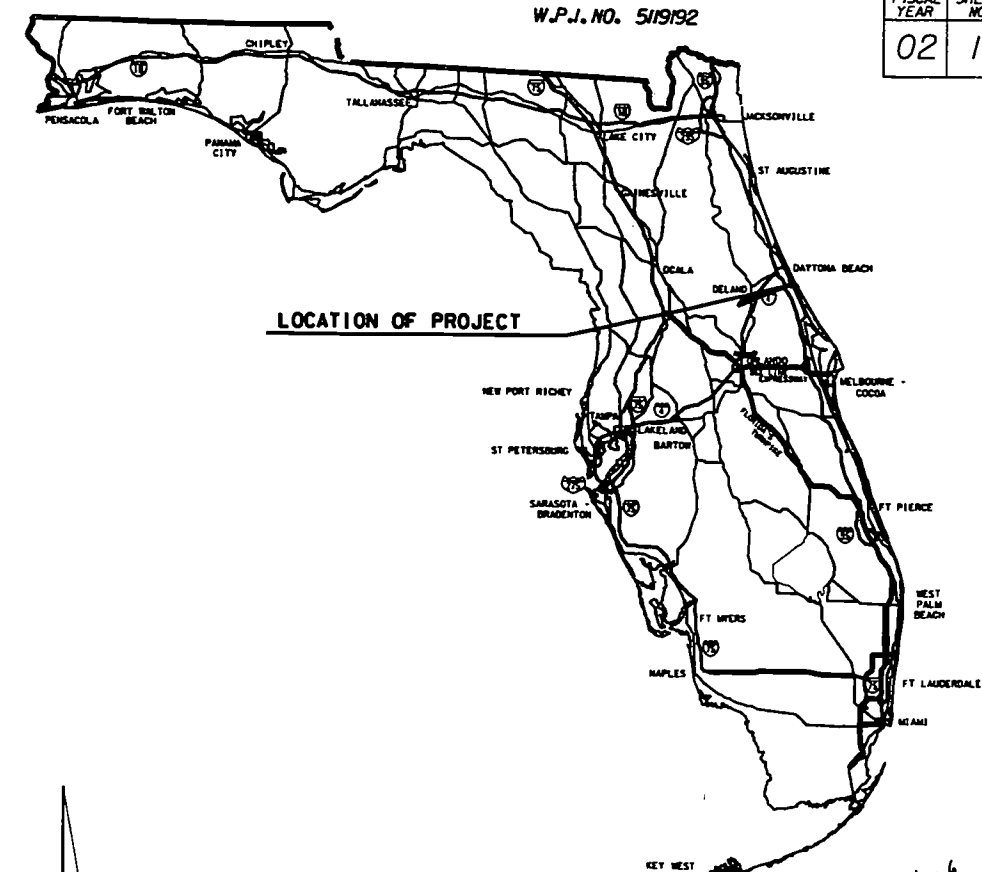
BEGIN PROJECT
STA. 106+43.077
k.p. 0.635 = M.P. 0.395

DOT/AAR CROSSING No. 272896-D
RAILROAD M.P. B 131.11
STA. 109+57.320

NOTE:
LENGTH OF PROJECT BASED ON CENTERLINE OF CONSTRUCTION.

LENGTH OF PROJECT	
	METERS
ROADWAY	2 906.923
BRIDGES	
NET LENGTH OF PROJ.	2 906.923
EXCEPTIONS	
GROSS LENGTH OF PROJ.	2 906.923

FDOT PROJECT MANAGER: JACKIE CALKINS



ROADWAY SHOP DRAWINGS
TO BE SUBMITTED TO:

JEFFREY M. SIEVERS, P.E.
P.E. No. 34140
201 East Pine St. - Suite 200
Orlando, Florida 32801
407/423-8398

PLANS PREPARED BY



VENDOR NO. VF-592246595-001

NOTE: THIS PROJECT TO BE LET TO CONTRACT WITH
FINANCIAL PROJECT No. 240811-1-52-01.

NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED
BY REPRODUCTION.

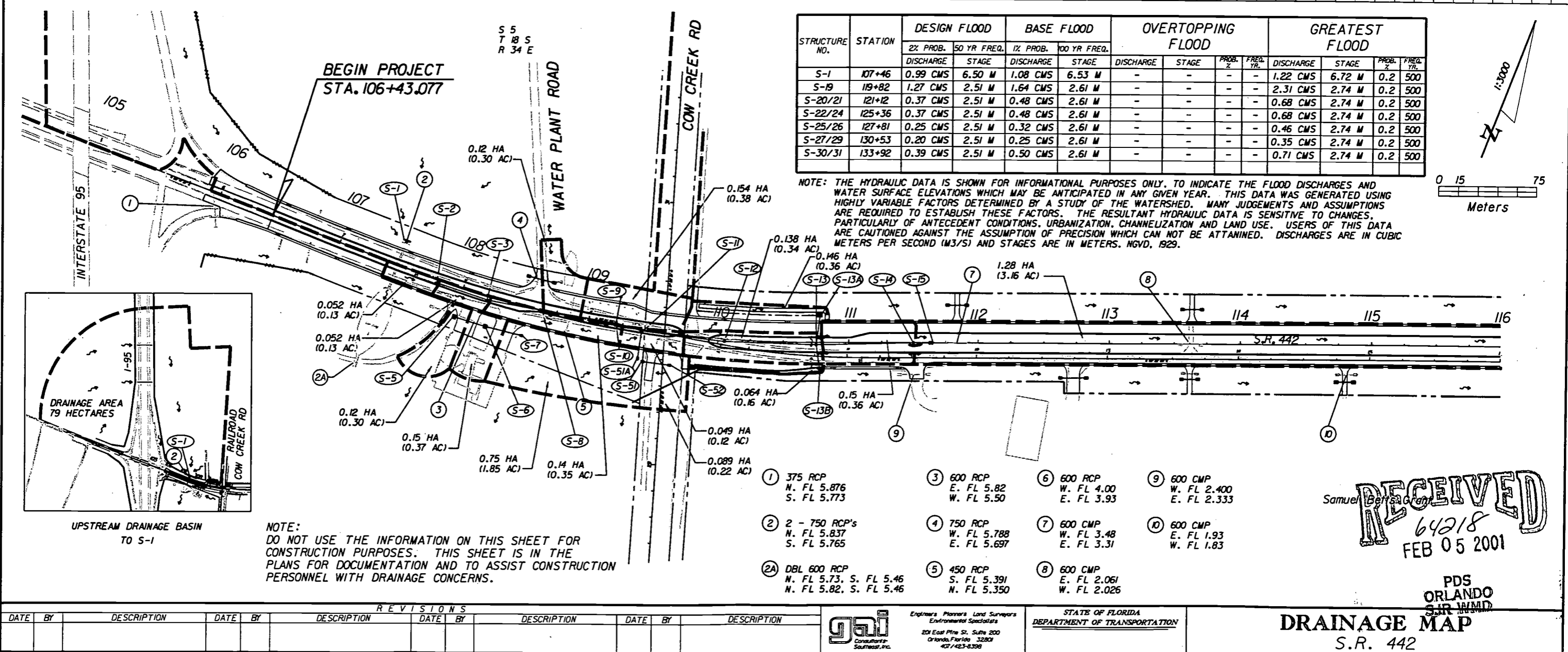
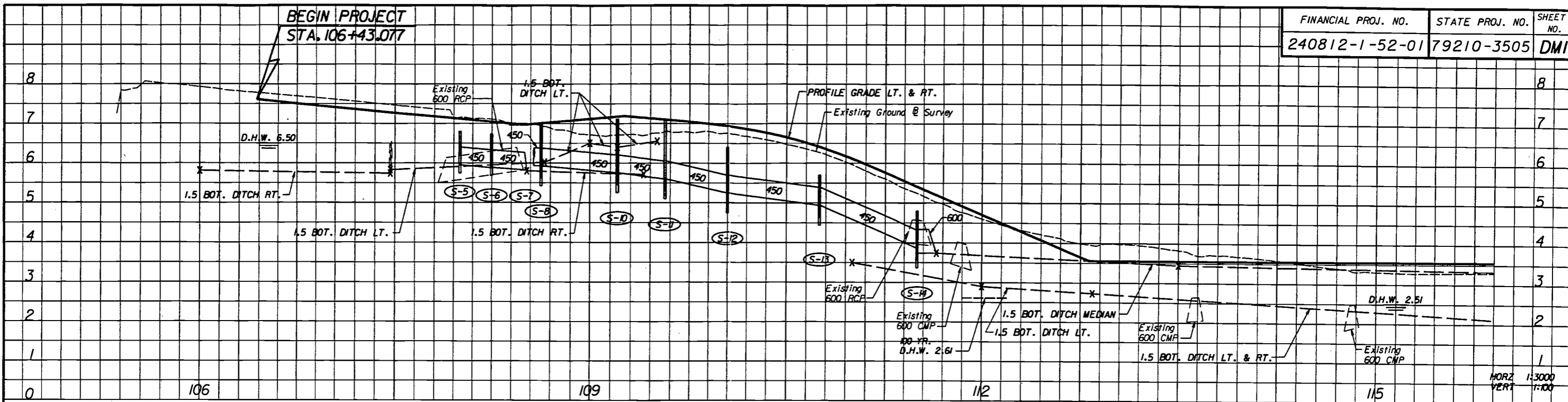
NOTE: THIS IS A METRIC UNIT PROJECT

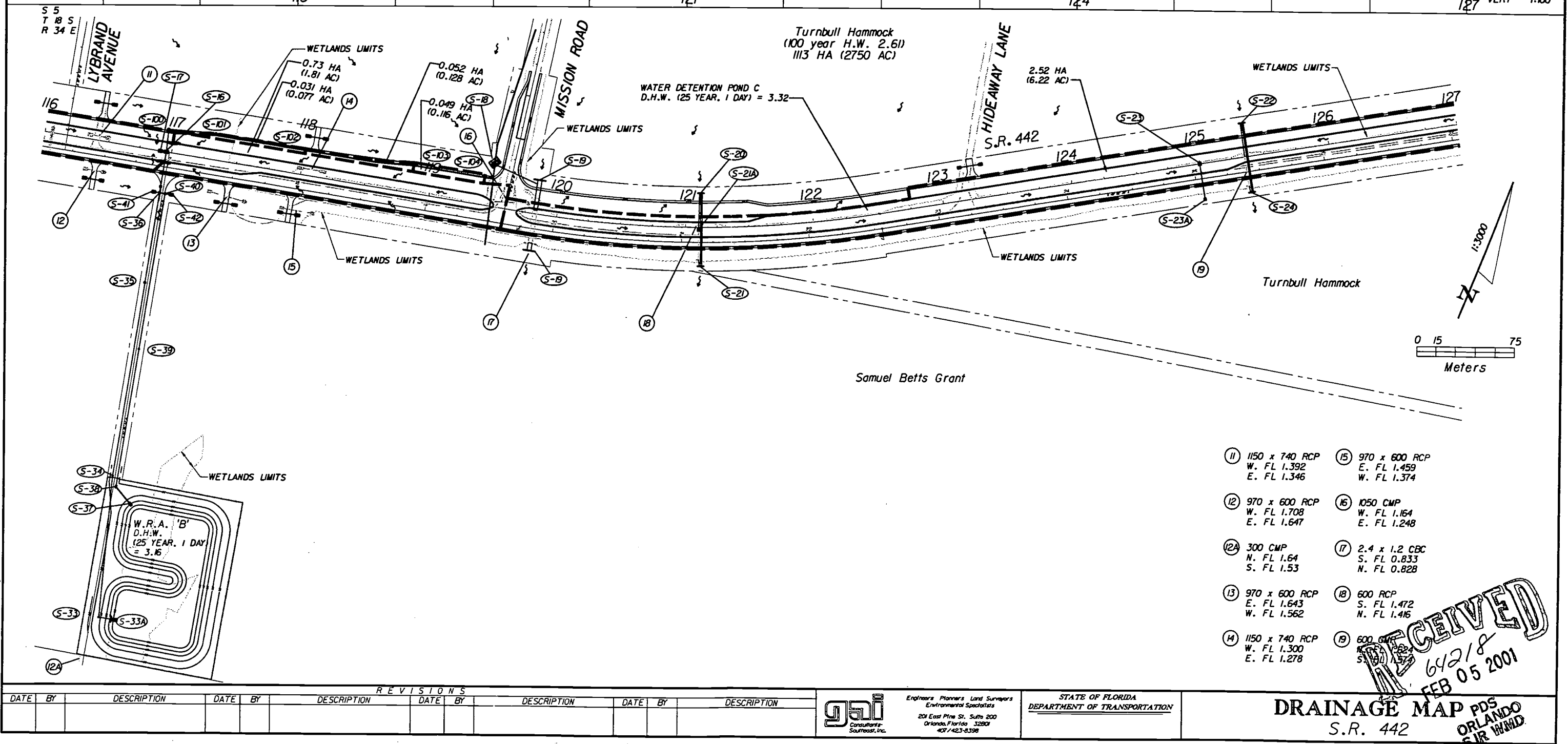
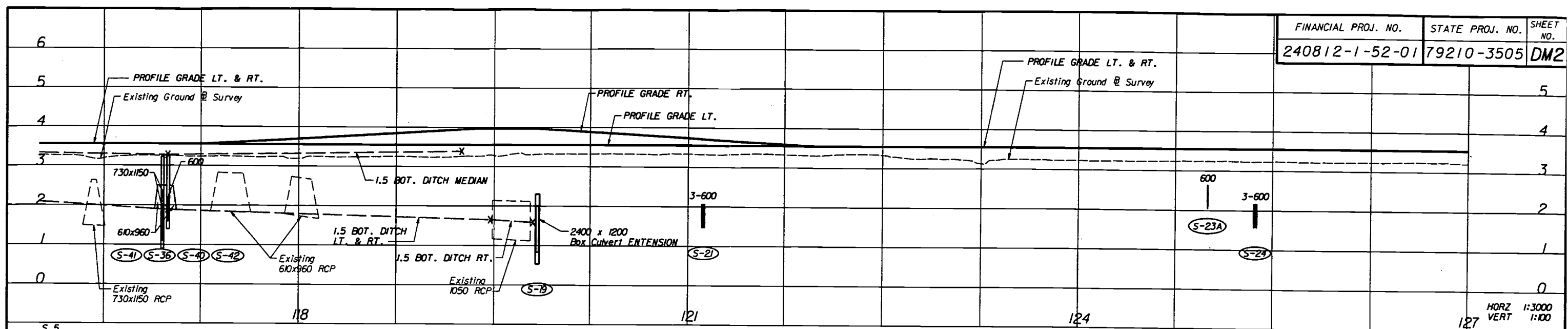
REVISIONS		
DATE	BY	DESCRIPTION

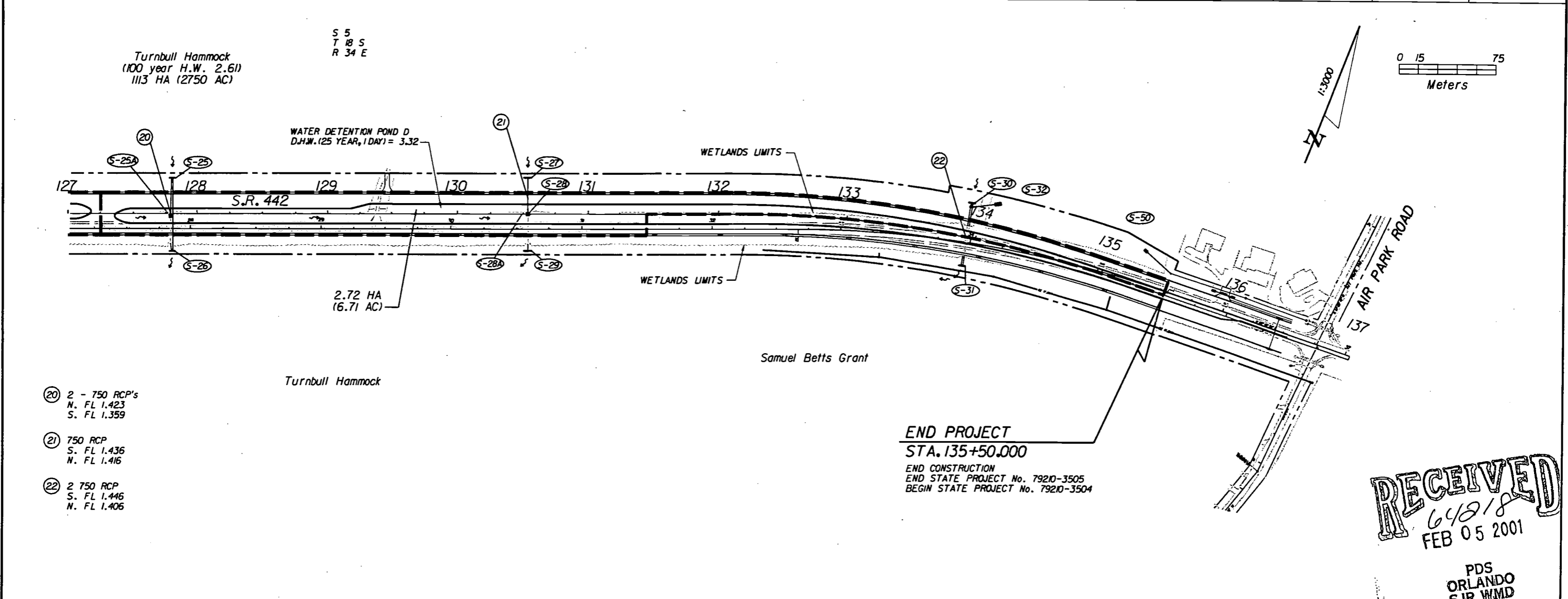
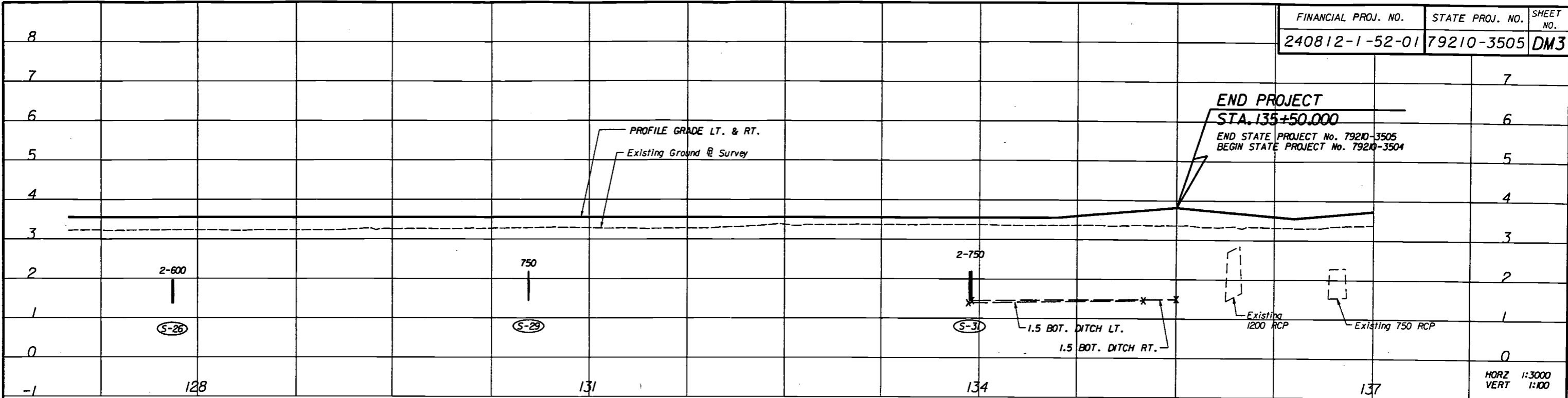
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ROADWAY PLANS
ENGINEER OF RECORD:

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ORLANDO
SUR WMD
P.E. No. 34140







- 20 - 750 RCP's
N. FL 1.423
S. FL 1.359
- 21 750 RCP
S. FL 1.436
N. FL 1.416
- 22 2 750 RCP
S. FL 1.446
N. FL 1.406

END PROJECT
STA. 135+50.000
END CONSTRUCTION
END STATE PROJECT No. 79210-3505
BEGIN STATE PROJECT No. 79210-3504

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ORLANDO
SJR WMD

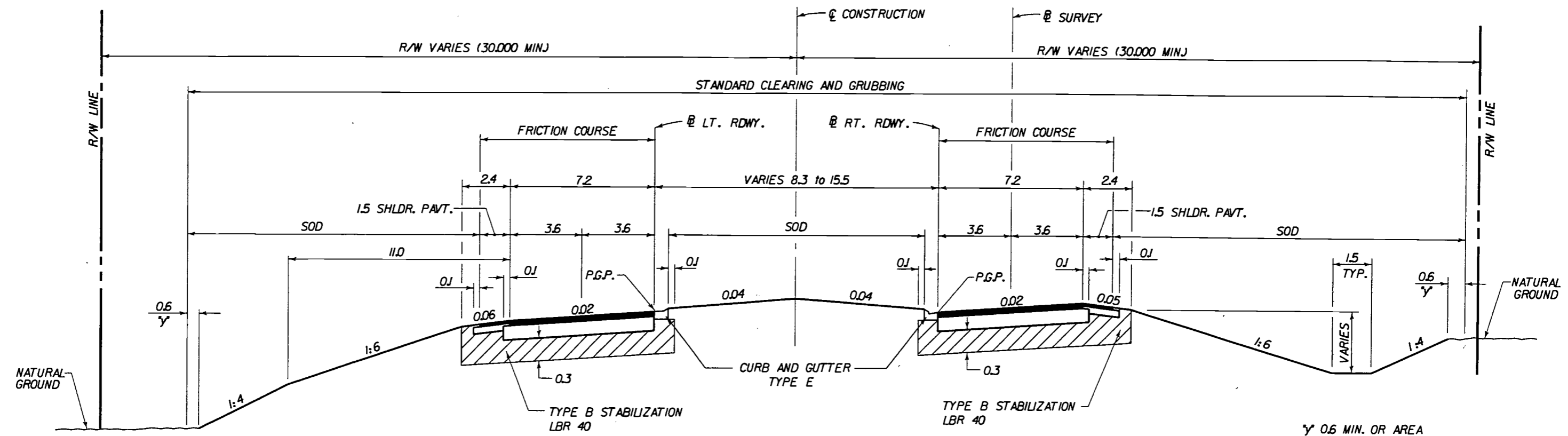
REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION



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Orlando, Florida 32801
407/423-8398

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DEPARTMENT OF TRANSPORTATION

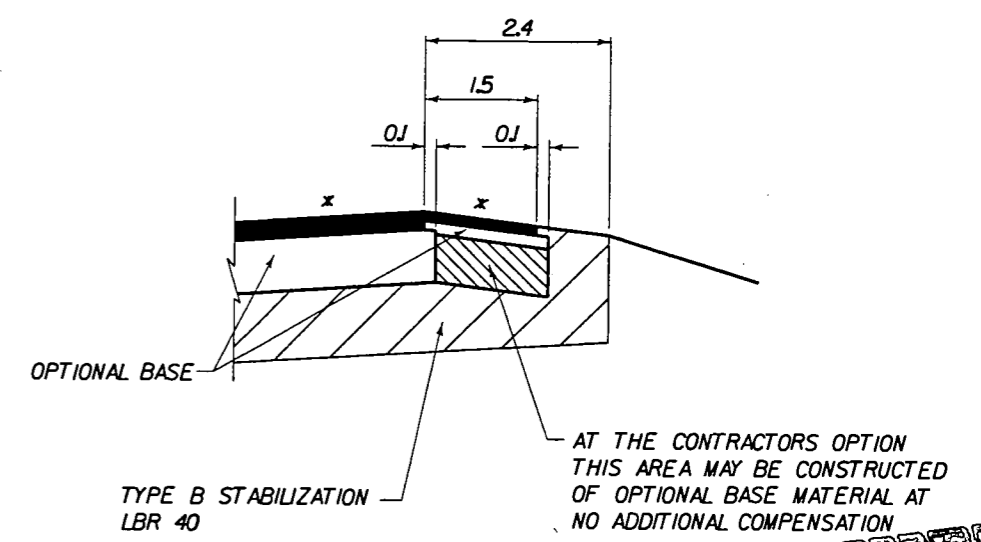
DRAINAGE MAP
S.R. 442



TYPICAL SECTION No. 1
S.R. 442
STA. 106+43.077 TO STA. 110+06.700

TRAFFIC DATA
CURRENT YEAR ESTIMATE • 1999 AADT • 9900
OPENING YEAR ESTIMATE • 2003 AADT • 12400
DESIGN YEAR ESTIMATE • 2023 AADT • 25000
K • 10.2% D • 50.0% T • 8.0%
DESIGN SPEED • 80 km/h

NEW CONSTRUCTION
OPTIONAL BASE GROUP 06 WITH
SUPERPAVE ASPHALTIC CONCRETE (TRAFFIC C) (110kg/M2) AND
FRICTION COURSE FC-6 (88kg/M2) (RUBBER)
SHOULDER PAVEMENT
OPTIONAL BASE GROUP 03 WITH
FRICTION COURSE FC-6 (88kg/M2) (RUBBER)



- NOTES:
1. STABILIZE ALL PAVED AND UNPAVED DRIVEWAYS WITH TYPE B STABILIZATION LBR 40.
 2. AT LOCATIONS WHERE EXISTING PAVED DRIVEWAYS EXIST, CONSTRUCT NEW DRIVEWAYS WITH OPTIONAL BASE GROUP 1 AND TYPE S STRUCTURAL COURSE 30 mm, SEE INDEX No. 515.
 3. SEE SHEET 44 FOR EMBANKMENT UTILIZATION FROM STA. 119+75 TO STA. 135+50.

SHOULDER PAVEMENT DETAIL
* SEE TYPICAL SECTION FOR CROSS SLOPES
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DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY

PI Sta. = 8+17.724
Delta = 10° 39' 31" (LT)
T = 54.303
L = 108.292
R = 582.26
PC Sta. = 7+63.421
PT Sta. = 8+71.713

BEGIN RECONSTRUCTION
BEGIN TYPE E C & G
MATCH EXISTING PAVEMENT

PI Sta. = 109+08.029
Delta = 2° 19' 02" (LT)
T = 169.384
L = 334.851
R = 900.000
PC Sta. = 107+38.645
PT Sta. = 110+73.496

Delta = 21° 19' 03" (LT)
 T = 168.257
 L = 332.623
 R = 894.000
 e = N.C.

Delta = 2° 19' 02" (LT)
T = 170.512
L = 337.081
R = 906.000
e = 0.02

FINANCIAL PROJ. NO.	STATE PROJ. NO.	SHEET NO.
240812-1-52-01	79210-3505	15



95

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5

—

BEGIN CONSTRUCTION

Sta. 105+58.000 @ CONST. =
Sta. 5+58.000 @ SURVEY

BEGIN 1.5 PAVED SHLDR. RT.
STA. 106+18.017
MATCH EXISTING SHLDR.

BEGIN PROJECT

Sta 106+43.077 @ CONST.

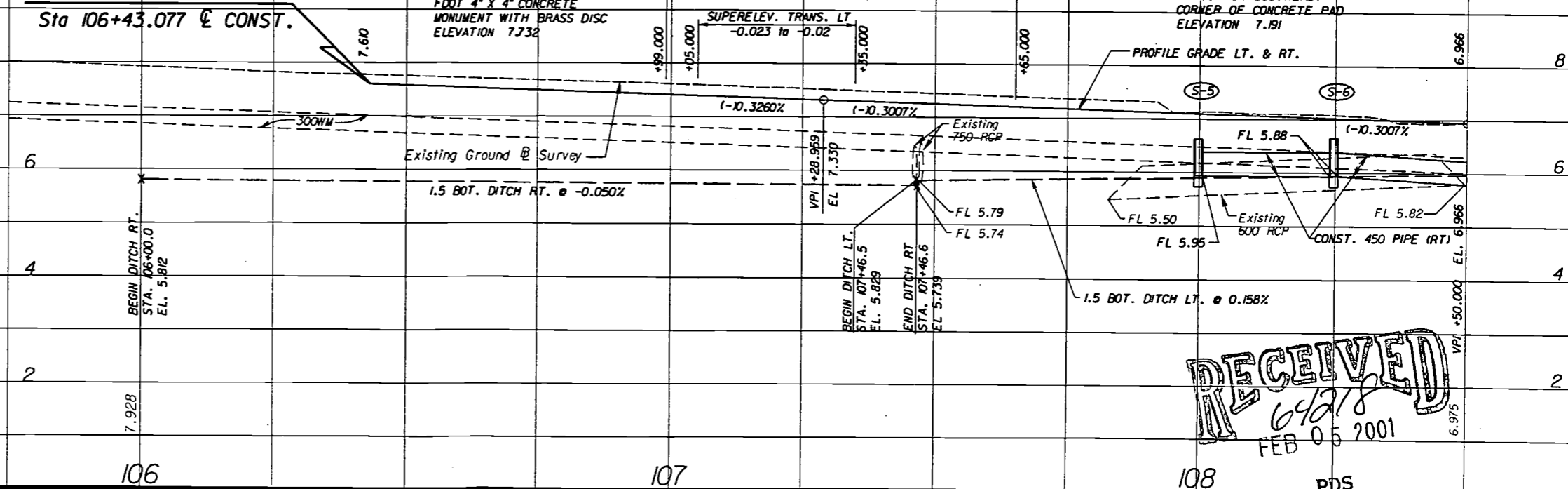
BM No. 195-71-A10
STA. 4+55.897, 14.759 LT
FDOT 4" X 4" CONCRETE
MONUMENT WITH BRASS DISC
ELEVATION 77.32

SUPERELEVATION TRANSITION RT

SOIL ELEVATION TRANSITION (ft)	
-0.026 to +0.02	

BM No. 8
STA. 8+00.398, 40.078 FT
"X" CUT ON SOUTHEAST
CORNER OF CONCRETE PAD
ELEVATION 7.191

SCALE RATIO: 1:100 VERT.



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S.R. 442 - PEAK AND PROFILE
STA. 105+00.000 to STA. 108+50

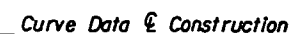
FINANCIAL PROJ. NO.	STATE PROJ. NO.	SHEET NO.
240812-1-52-01	79210-3505	16



PI Sta. = 8+17.724
 Delta = 10° 39' 31" LT
 T = 54.303
 L = 108.292
 R = 582.126
 PC Sta. = 7+63.421
 PT Sta. = 8+71.713



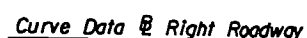
PI Sta. = 10+57.105
Delta = 10° 39' 31" L
T = 54.303
L = 108.292
R = 582.126
PC Sta. = 10+02.802
PT Sta. = 11+11.094



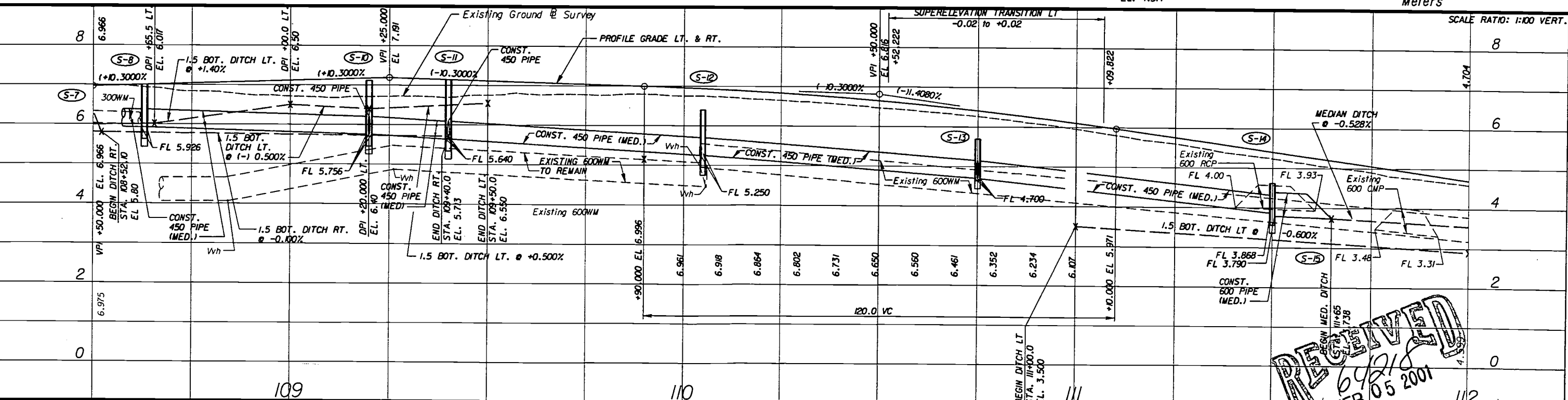
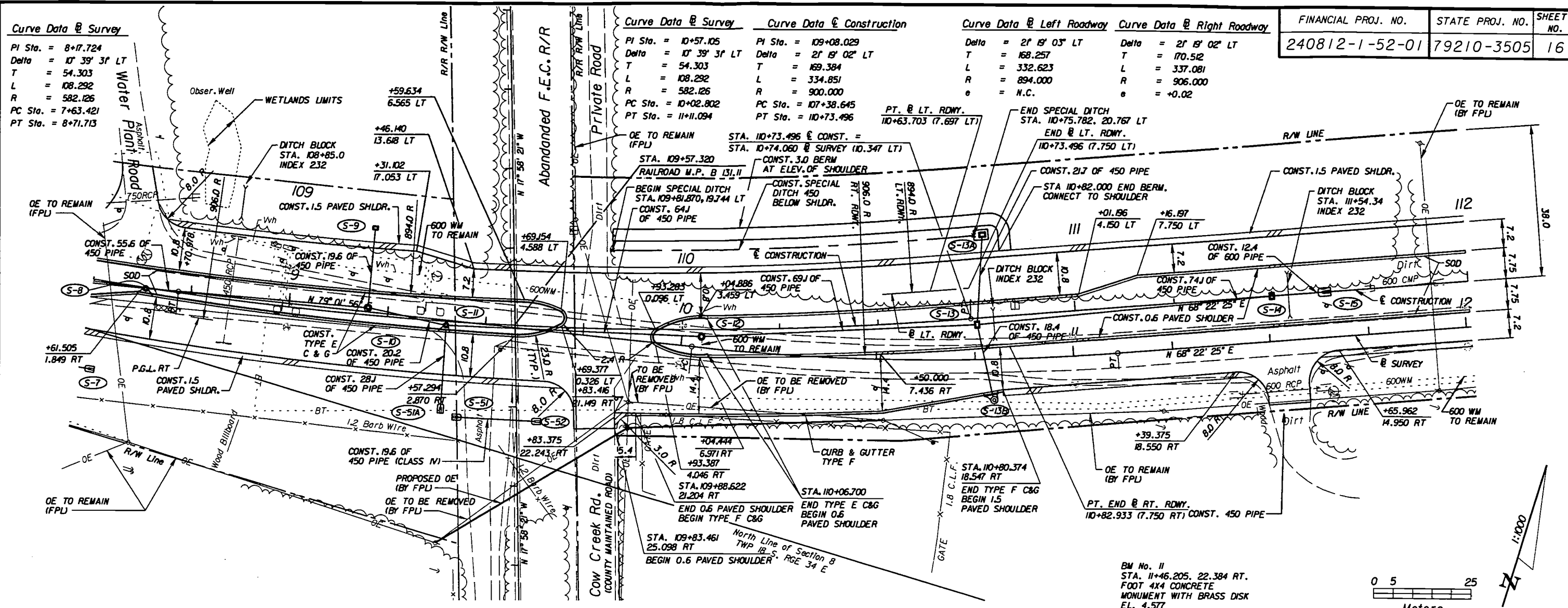
PI Sta. = 109+08.029
Delta = 2° 19' 02" LT
T = 169.384
L = 334.851
R = 900.000
PC Sta. = 107+38.645
PT Sta. = 110+73.496



Delta = 21° 19' 03" LT
T = 168.257
L = 332.623
R = 894.000
e = N.C.



$\Delta\alpha = 2^{\circ} 19' 02''$ LT
 $T = 170.512$
 $L = 337.081$
 $R = 906.000$
 $e = +0.02$

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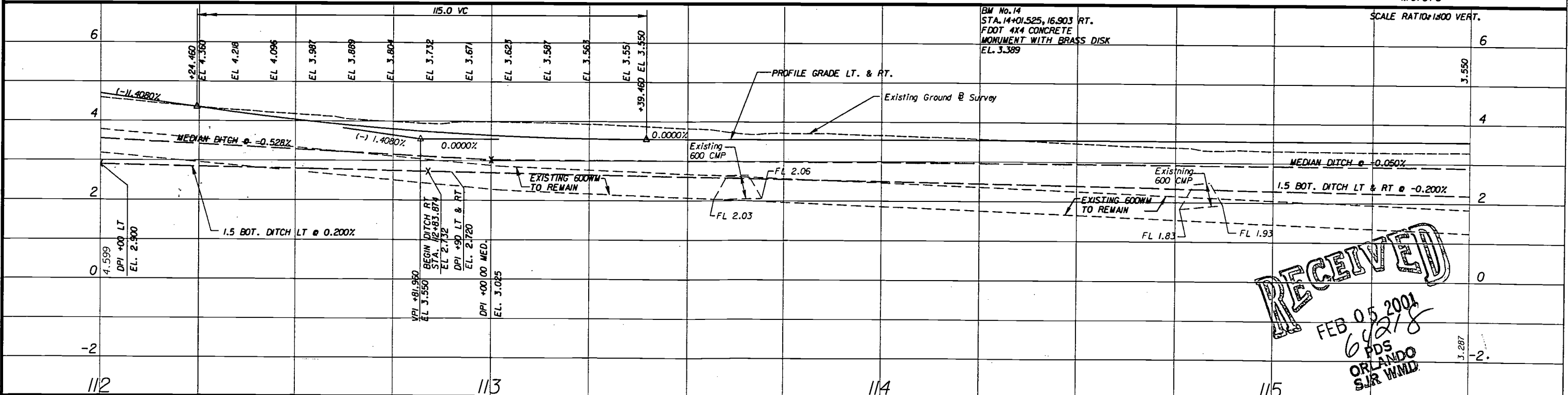
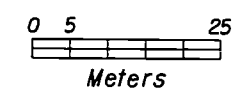
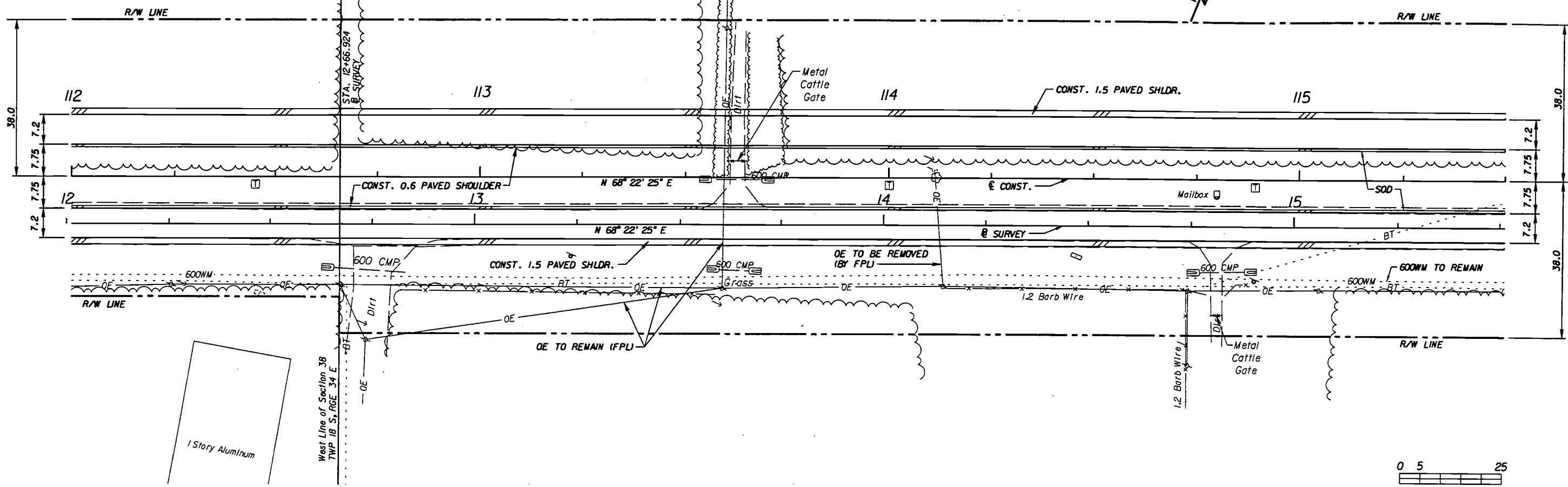
יזרעל
Consultants
Equipment

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Environmental Specialists
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Orlando, Florida 32801

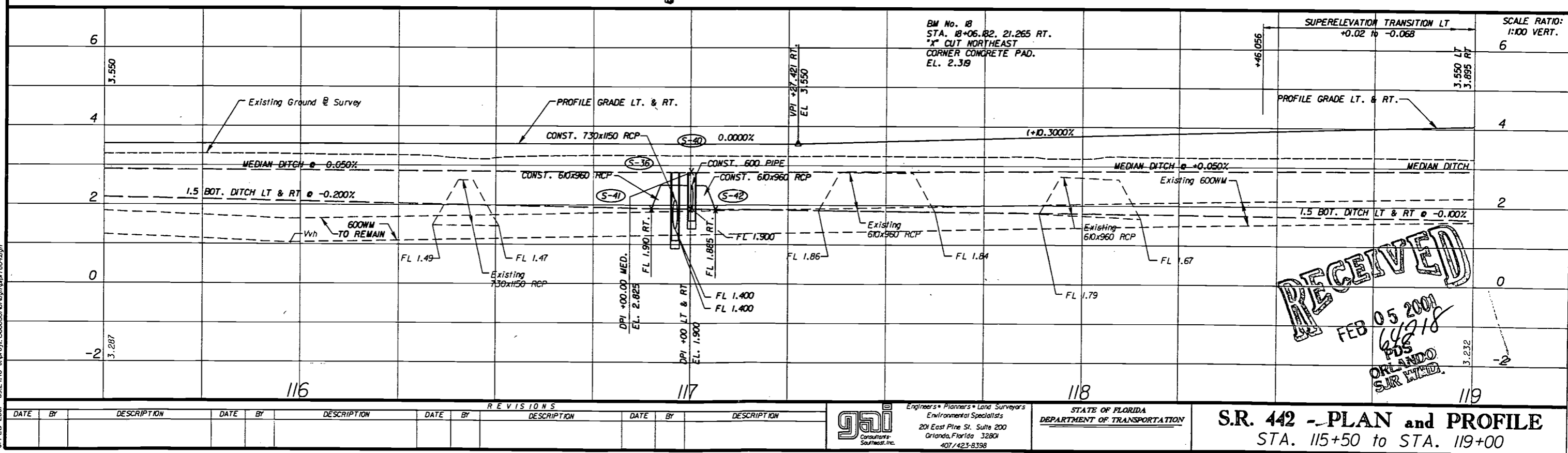
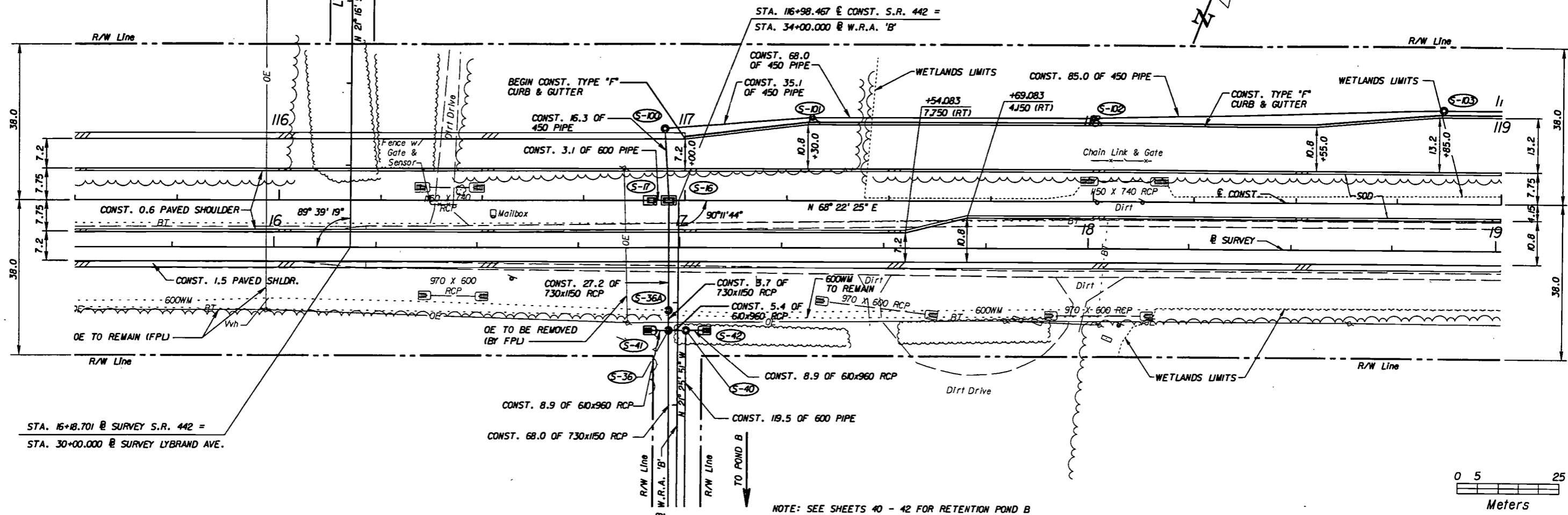
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

S.R. 442 - PLANS and PROFILE

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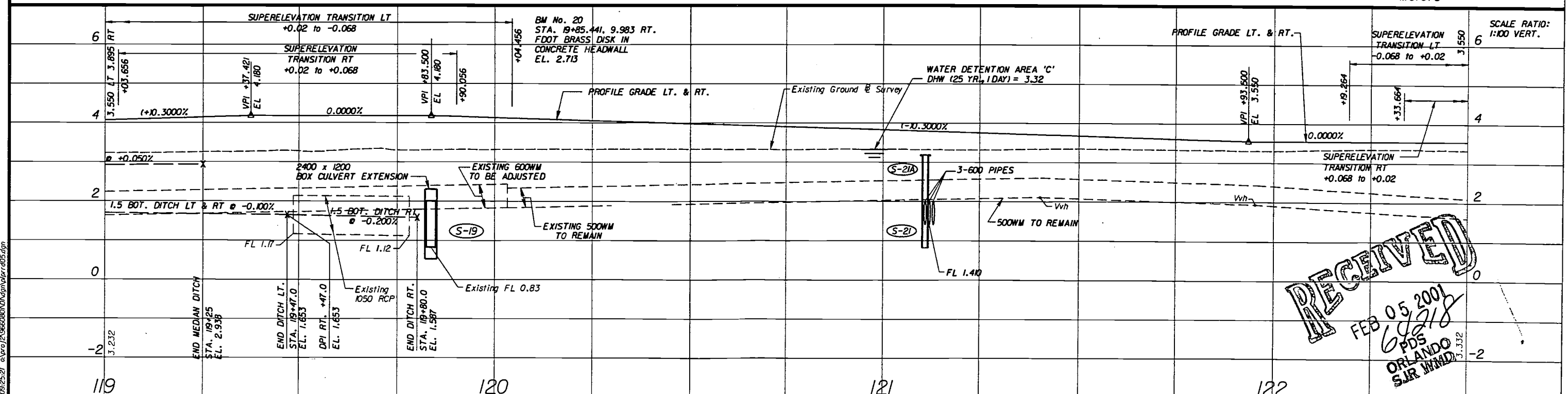
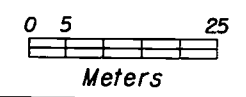
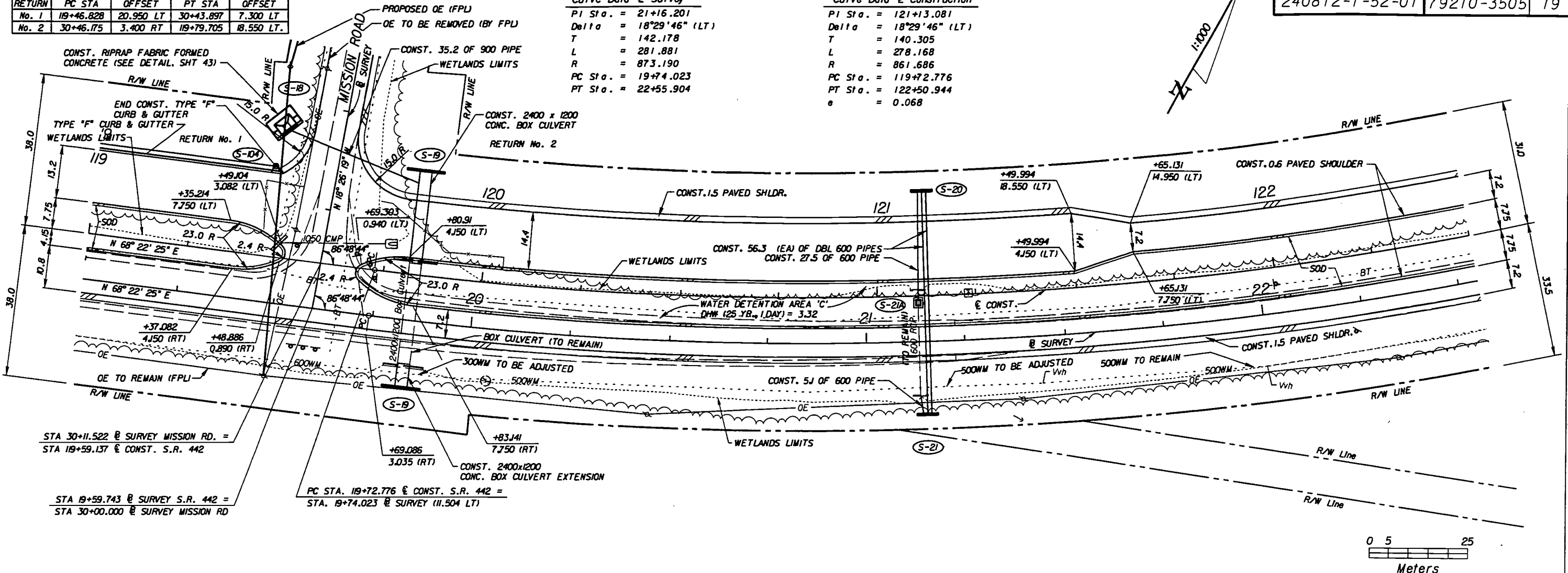
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

MISSION ROAD				
RETURN	PC STA	OFFSET	PT STA	OFFSET
No. 1	19+46.828	20.950 LT	30+43.897	7.300 LT
No. 2	30+46.175	3.400 RT	19+79.705	18.550 LT

SEE SHEET No. 24

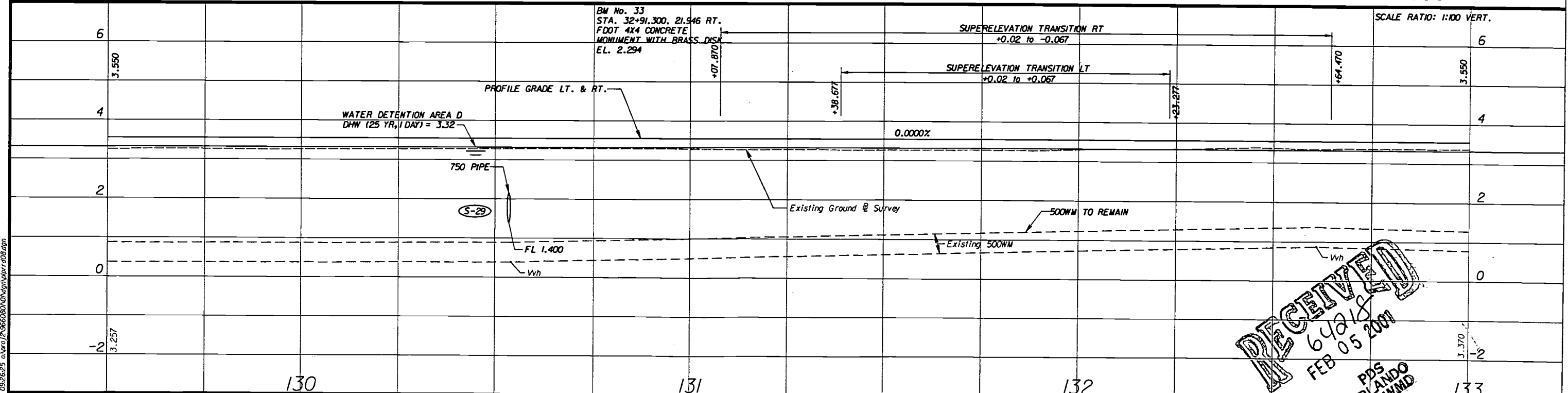
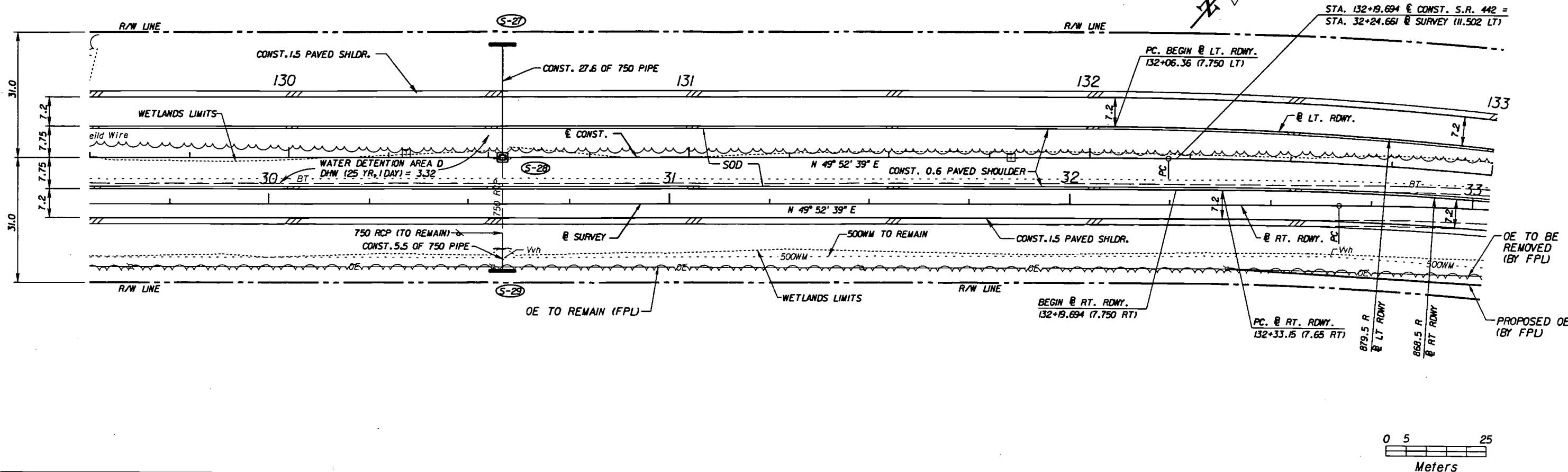
Curve Data @ Survey
PI Sta. = 21+16.201
Delta = 18°29'46" (LT)
T = 142.178
L = 281.881
R = 873.190
PC Sta. = 19+74.023
PT Sta. = 22+55.904

Curve Data @ Construction
PI Sta. = 121+13.081
Delta = 18°29'46" (LT)
T = 140.305
L = 278.168
R = 861.686
PC Sta. = 119+72.776
PT Sta. = 122+50.944
e = 0.068



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Curve Data @ Survey	Curve Data @ Construction	Curve Data @ Left Rdwy.	Curve Data @ Right Rdwy.
PI Sta. = 34+12.577	PI Sta. = 133+65.461	Delta = 18° 56' 15" (RT)	Delta = 18° 56' 15" (RT)
Delta = 18° 56' 15" (RT)	Delta = 18° 56' 15" (RT)	T = 146.684	T = 144.850
T = 145.632	T = 145.768	L = 290.693	L = 287.057
L = 288.608	L = 288.876	R = 879.500	R = 868.500
R = 873.190	R = 874.000	e = 0.067	e = 0.067
PC Sta. = 32+66.945	PC Sta. = 132+19.694		
PT Sta. = 35+55.553	PT Sta. = 135+08.570		



APPENDIX E

SOILS MAP

Hydrologic Soil Group—Volusia County, Florida




**Natural Resources
Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

3/15/2018
Page 1 of 4

MAP LEGEND

Area of Interest (AOI)









 Area of Interest (AOI)

Soils

Soil Rating Polygons





 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Lines


 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Points






 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available


Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Volusia County, Florida

Survey Area Data: Version 16, Oct 4, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Apr 5, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
14	Chobee fine sandy loam	B/D	13.9	16.3%
17	Daytona sand, 0 to 5 percent slopes	A	5.3	6.2%
20	EauGallie fine sand	A/D	13.1	15.4%
29	Immokalee sand	B/D	7.5	8.7%
32	Myakka-Myakka, wet, fine sands, 0 to 2 percent slopes	A/D	4.4	5.2%
42	Paola fine sand, 0 to 8 percent slopes	A	2.7	3.2%
56	Samsula muck, frequently ponded, 0 to 1 percent slopes	A/D	0.3	0.4%
69	Tuscawilla fine sand	B/D	38.0	44.5%
Totals for Area of Interest			85.2	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX F

FDOT APPROVED INFLATION FACTORS



Inflation Factors

This “*Transportation Costs*” report is one of a series of reports issued by the Office of Policy Planning. It provides information on inflation factors and other indices that may be used to convert Present Day Costs (PDC) to Year Of Expenditure costs (YOE) or vice versa. This report is updated annually when the factors are posted within the FDOT Work Program Instructions.

Please note that the methodology for Inflationary adjustments relating to specific transportation projects should be addressed with the district office where the project will be located. For general use or non-specific areas, the guidelines provided herein may be used for inflationary adjustments.

Construction Cost Inflation Factors

The table on the next page includes the inflation factors and present day cost (PDC) multipliers that are applied to the Department’s Work Program for highway construction costs expressed in Fiscal Year 2017 dollars.

Other Transportation Cost Inflation Factors

Other indices may be used to adjust project costs for other transportation modes or non-construction components of costs. Examples are as follows:

The Consumer Price Index (CPI, also retail price index) is a weighted average of prices of a specified set of products and services purchased by wage earners in urban areas. As such, it provides one measure of inflation. The CPI is a fixed quantity price index and a reasonable cost-of-living index.

The Employment Cost Index (ECI) is based on the National Compensation Survey. It measures quarterly changes in compensation costs, which include wages, salaries, and other employer costs for civilian workers (nonfarm private industry and state and local government).

The monthly series, Producer Price Index for Other Non-residential Construction, is available from the Bureau of Labor Statistics (BLS). It is not exclusively a highway construction index, but it is the best available national estimate of changes in highway costs from month to month.



FLORIDA DEPARTMENT OF TRANSPORTATION

TRANSPORTATION COSTS REPORTS

Work Program Highway Construction Cost Inflation Factors

Fiscal Year	Inflation Factor	PDC Multiplier
2017	Base	1.000
2018	2.7%	1.027
2019	2.8%	1.056
2020	2.6%	1.083
2021	2.5%	1.110
2022	2.7%	1.140
2023	2.8%	1.172
2024	2.9%	1.206
2025	3.0%	1.242
2026	3.1%	1.281
2027	3.2%	1.322
2028	3.3%	1.365
2029	3.3%	1.410
2030	3.3%	1.457
2031	3.3%	1.505
2032	3.3%	1.555
2033	3.3%	1.606
2034	3.3%	1.659
2035	3.3%	1.714
2036	3.3%	1.770
2037	3.3%	1.829
Source: Office of Work Program and Budget, (Fiscal Year 2017 is July 1, 2016 to June 30, 2017)		

Advisory Inflation Factors For Previous Years

Another “*Transportation Costs*” report covers highway construction cost inflation for previous years. “*Advisory Inflation Factors For Previous Years (1987-2015)*” provides Present Day Cost (PDC) multipliers that enable project cost estimates from previous years to be updated to FY 2015. This report is updated about once a year. For the table and text providing this information, please go to <http://www.dot.state.fl.us/planning/policy/costs/RetroCostInflation.pdf>.